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EDITORIAL

After the conducted double-blind peer review process and the improvement of the manuscripts accepted for publication, Issue 1 Year 2020 of the *Economic Horizons* contains seven contributions: four original scientific papers and two review papers, as well as the announcement of an international scientific conference.

Starting from the attitude that national culture is an important factor of respecting tax rules, *Taiwo Azeez Olaniyi* and *Babatunde Akinola* examine the influence of the national culture dimensions (the power distance, individualism, masculinity, the avoidance of uncertainty, long-term orientation, i.e. perspective, and indulgence) on obeying the rules of the tax policy in ten African countries in the period from 2010 to 2016. The coauthors' conclusion implies that a high level of the obedience of the rules of the tax policy is connected with a low power distance, a low level of individualism, low short-term orientation, i.e. perspective, the moderate avoidance of uncertainty, masculinity and a high degree of indulgence. Pursuant to that, tax policy creators are recommended that, while creating tax legislation, they should consider and appreciate the cultural values of every individual country.

Bearing in mind the fact that the question of fiscal consolidations was intensified in the period after the global economic and financial recession, *Olgica Glavaski* and *Emilija Beker Pucar* analyze the measures applied in the European Union economies in the period prior to and after the recession, i.e. from 1990 to 2007, and from 2010 to 2015, respectively, which on their part do not exert an influence on the slowdown of the economic activity. The research study indicates

that there are successful and expansionary effects of the "cold shower" and the gradual episodes of fiscal consolidation and that there are also differences in the duration, structure and effects of fiscal consolidations prior to and after the global recession. The conclusion is that the measures of fiscal adaptation based on a reduction in public consumption are more frequently connected with expansionary effects and that they are more successful in reducing the public debt and a budgetary deficit than the measures based upon a decrease in taxes.

Given the fact that loan risk is one of the biggest challenges that banks are faced with, *Wasiu Abiodun Sanyaolu*, *Trimisiu Tunji Siyanbola* and *Hafeez Babatunde Makinde* analyze the characteristics of the non-performing loans of the Nigerian deposit money banks given the fact that the largest number of problems in the business operations performed by banks are predominantly connected with non-performing loans. The research study encompassed a total of ten selected deposit money banks in Nigeria in the period from 2008 to 2017. The research results show that the capital adequacy ratio, the size and the loans-to-total-assets-of-banks ratio negatively and significantly influence non-performing loans on the one hand, whereas, on the other, profitability and age significantly, but positively, influence the non-performing loans of the deposit money banks. Simultaneously, the liquidity ratio negatively, but insignificantly, influences non-performing loans, whereas not a single macroeconomic variable has any significant influence on non-performing loans. The recommendation for the banks implies that they should be developing loan risk management strategies, bearing in mind the bank-specific and economic determinants of non-performing loans.

Appreciating the significance of enterprises' responsibility pertaining to the protection and

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preservation of the living environment, *Edirin Jeroh* conducts in his study a comparative analysis of the internal determinants of the ecological reporting practices applied by enterprises in Sub-Saharan Africa. The research study conducted on a sample of 60 enterprises from Kenya, Nigeria and South Africa determined the existence of a different degree of mandatory ecological reporting in the mentioned countries. The author considers that it is necessary that uniform reporting standards should institutionally be developed throughout the Sub-Saharan African region with the aim of protecting the living environment and a greater responsibility on the part of enterprises with respect to ecological reporting so as to have disputable ecological issues solved in a more successful manner.

Pursuant to the attitude that knowledge is an important resource and driver in the era of the Fourth Industrial Revolution, *Vojislav Babic* and *Sinisa Zaric* conducted an empirical research study in construction companies in the Republic of Serbia aimed at determining the influence of knowledge management on the level of the salaries of the employed in medium-sized and big construction companies. The research study conducted on a sample of 130 companies tests the hypothesis that knowledge management positively influences the growth of average salaries in medium-sized and big companies in the Republic of Serbia. The research results show that knowledge management generates significant implications for companies' results and, pursuant to that, positively influences the growth of average salaries as well.

In the competitive conditions of providing tourism services, enterprises' service orientation towards end users is important, which can be considered as a competitive advantage on the tourism market.

Pursuant to the mentioned, *Milos Marjanovic* examines the relationship between service orientation, job satisfaction and organizational support amongst employees in tourism organizations in the Republic of Serbia. The research results have shown that job satisfaction exerts a significant influence on service orientation, whereas the influence of organizational support on service orientation is a statistical variable of lesser significance. According to the research study, job satisfaction appears as an intermediary between organizational support and service orientation. The results obtained in this research study can be useful for managers working in tourism agencies, because they can improve service standards based upon their employees' behavior and attitudes.

As the Chairwoman of the Program Board, *Violeta Domanovic* announces the sixth international scientific conference entitled *Contemporary Issues in Economics, Business and Management - EBM 2020*, which is organized by the Faculty of Economics of the University of Kragujevac and will be held on 9th and 10th October 2020. The participants at the Conference will have an opportunity to point to the current developmental trends in the theory and practice of economics, business economics and management.

On this occasion, on behalf of the Journal's Editorial Board and on my own behalf, I would like to thank, first of all, the authors of the contributions published in this Issue of the Journal. Also, our special gratitude goes to the reviewers, whose constructive and critical comments and suggestions given to the authors of the submitted contributions, have contributed to raising the level of the quality of the published papers.

Editor-in-Chief
Vlastimir Lekovic

Vlastimir Lekovic is a Professor at the Faculty of Economics, University of Kragujevac. He teaches several undergraduate, graduate and postgraduate courses, namely: Comparative Economic Systems, Public Sector Economics, Institutional Economics and Market Regulation Policies. He received his PhD in economics from the Faculty of Economics in Kragujevac, in the scientific field of the general concepts of economy and economic development. The key areas of his scientific research interests are economic systems, the economic policy and institutional economics.

Original scientific article

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NATIONAL CULTURE AND TAX PERFORMANCE IN AFRICA

Taiwo Azeez Olaniyi* and Babatunde Akinola

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Traditional theories ignored the power of culture with respect to tax performance, even though culture does have an impact on everything that people do or decide not to do. This study examines the impact of the national culture dimensions: the power distance, individualism, masculinity, uncertainty avoidance, long-term orientation and indulgence on tax performance in ten African countries. A quantitative research design was adopted and a panel dataset from 2010 to 2016 was analyzed using the Panel-Corrected Standard Error estimator. The results show that indulgence indicates a significant positive impact on tax performance, the power distance, individualism and long-term orientation have a significant negative impact on tax performance, whereas masculinity and uncertainty avoidance have an insignificant impact. Thus, high tax performance is associated with a low power distance, low individualism, low short-term orientation, moderate uncertainty avoidance, masculinity and high indulgence. This study recommends that tax policymakers should consider cultural values when designing tax compliance legislation or when investigating possible behavioral irregularities.

Keywords: taxation, culture, performance, Africa

JEL Classification: D82, H25, M49

INTRODUCTION

The role of taxation in weaning a country off foreign reliance has attracted every tax administration effort geared towards the achievement of tax collection targets and monitoring performance outcomes across all levels. In less-developed economies, revenue may be the only recognized performance parameter; however, tax administrators in developed nations

track a range of tax performance measures, through which countries can be classified into three tax performance levels - high, low or average (Kloeden, 2011). These measures are highly dependent on a tax compliance level; therefore, tax performance and tax compliance are interchangeably used.

Economic and psychological/behavioral schools of thoughts are commonly used to buttress tax performance. The economic school is conceptualized on a tax gap, while the psychological school supports the behavioral approach in understanding tax performance (James & Alley, 2002). The cost/

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benefit analysis of noncompliance forms a thrust of tax performance from an economic point of view, whereas the psychological approach measures tax performance in relation to culture, social norms, the attitude and a moral judgment. However, according to C. W. Bame-Aldred, J. B. Cullen, K. D. Martin and K. P. Parboteeah (2011), the contribution of culture to the understanding of tax performance may be significant from one country to another.

National culture includes the dimensions that distinguish nations based on how citizens handle inequality (the power distance), how they cope with uncertainty (Uncertainty Avoidance - UA), their relationships with a group (individuality), the traits exhibited as a result of being born as a girl or as a boy (masculinity/femininity), their extent of being futuristic (Long-term Orientation - LTO) and their plight when enjoying life is concerned (indulgence). Thus, the examination of the relationships between the different dimensions of national culture and tax performance deserves urgent attention simply because culture influences everything people do or decide not to do.

Although no one likes paying tax, every citizen considering him-/herself to be a patriot should consider regular tax payment as a desire to uplift his/her nation (Eiya, Ilaboya & Okoye, 2016). What is worrisome, however, is the resultant tax gap measured by the amount of a tax due and the amount actually collected, usually caused by the underpayment of tax value, not filling out a tax return, the declaration of fraudulent revenue and expenses, among other things (Raczkowski & Mroz, 2018).

Consequently, African countries lose more than \$50 billion each year (Fiawoo, 2018), which limits the Government's ability to raise tax revenue. Based on these premises, it is pertinent to inquire as to why some tax payers behave themselves while others misbehave with respect to their tax payment duty. Of a serious concern is the fact that Africa is well-known for a lack of enthusiasm when tax payment is in question (behavioral issues), as demonstrated in the tax percentage of the GDP for the majority of African countries, which either falls or hovers along

the same rate. In 2010, for instance, the tax percentage of the GDP in Nigeria fell by 55%, and in Egypt and Burkina Faso by 10% and 12%, respectively (World Bank Indicator).

As a means for a reduction in tax evasion and the improvement of tax performance, tax audit and penalties for being in default were taken into consideration by earlier studies, whereas only few focused on the behavioral factors to fully comprehend taxpayers' compliant behavior. More worrisome is the insignificant attention paid to the worldwide system measure of national culture, i.e. tax performance (Hofstede, 1980). This neglect is a serious academic gap, which forms the policy thrust of this study.

The importance of culture in the taxation context has only partially been addressed in the literature. However, either omissions and/or inadequacies in these studies, especially those exploring the role national cultures play in explaining countries' tax performance by taking cognizance of the interaction between tax compliance and tax evasion, is an academic novelty presented in this study. Even more so, it is the first of its kind to apply the cultural framework propounded/established by G. Hofstede (1980) as a measure of national culture in relation to tax performance in Africa.

Against this background, the study generally examines the influence that national culture has on tax performance in Africa. Specifically, the impacts that different dimensions of national cultural (such as indulgence, the power distance (PD), masculinity, as well as the UA, the LTO and individualism) have on tax performance are evaluated. With respect to tax performance in Africa (Nigeria, Ghana, Burkina-Faso, Egypt, Mozambique, South Africa, Tanzania, Cape Verde, Senegal and Sierra Leone), it is hypothesized as follows:

- H1: The PD, individualism and masculinity have not statistically significant impact on tax performance.
- H2: The UA, the LTO and indulgence have not statistically significant impact on tax performance.

The aforementioned synthesis refers to the time period between 2010 (being the year when indulgence, as the latest dimension of culture, was first introduced) and 2016 (based on the data availability).

LITERATURE REVIEW

Conceptual clarifications

Culture

Anthropologists often disagree upon the meaning of culture, but they believe that a culture comprises a set of human behaviors passed down from one generation to another. Generally, it is simply linked to the lifestyle and values of a given group of people. Precisely, according to (Hofstede, 2010), culture refers to the style of thinking, feeling and behavioral patterns of a specific group. It is a summation of the attitudes, values, norms and styles that differentiate one group from all other groups (Agbetunde, Ojediran & Fadipe, 2016). Culture is timely and it has an impact on everything that people do or decide not to do. Undoubtedly, culture plays a useful role in the development of human society, likewise cuts across numerous fields. Thus, the power of culture cannot be ignored (Huang, 2016).

The psychological level and the institutional level have been observed as two traditionally different approaches to looking at culture. The issues related to the individual behavior, attitudes and norms of a particular culture are considered at the psychological level, while the institutional level looks at national culture as embodied in institutions. There is no doubt that culture is unique and varies across nations. These variations have led to outright differences in the ways people think and behave, such that those born in the same country tend to share similar cultural instincts (Nordström & Vahlne, 1994). Hence, D. Matsumoto (2007) pointed out the fact that cultural differences emanated from either implicit or explicit elements (underlying values and physical objects, respectively). These cultural differences may, therefore, explain the

reasons why some individuals pay tax while others refuse compliance.

The dimensions that include the LTO, individualism, the UA, the power distance, masculinity and indulgence, too, as the implicit elements have also been considered in the literature (Hofstede, 1980; 2001; 2010) and D. A. Ralston, C. P. Egri and E. Reynaud (2011). In this regard, the magnitude by which the members of a group with a limited power believe that power is unevenly distributed is called the power distance (Hofstede, 2010). It is bottom-top addressed so that a low power distance society reveals a culture where power is unequally distributed. However, the UA refers to the extent by which uncertain scenarios are perceived as threatening and the extent to which such scenarios are avoided (Suhaila, 2016). A. Tausch (2015) indicates the manner at which a culture programs its members to address the situations different from the norms.

Individualism highlights the degree to which individuals exhibit a self-syndrome. It describes a society devoid of an individual bond, i.e. everyone is expected to cater for themselves (Tausch, 2015), thus suggesting that individuals are independent of themselves and exist on their own. Masculinity buttresses culture with regards to the gender. It is the value attributed to rigor and achievement as against the feminine values of care and modesty (Hofstede, 2001). The LTO describes the values directed towards future gains, likewise the attitudes directed towards changing situations. On the other hand, short-term orientation is backwards looking and describes the past and present values of variables like the ability to fulfill social obligations as well as those of the face preservation and national pride (Hofstede, 2010).

Indulgence *versus* restraint is the latest national cultural dimension introduced by G. Hofstede (2010). The idea behind indulgence and restraint is similar to a comparison of leisure with work ethics (Huang, 2016). Happiness, being responsible for one's life, making friends, enjoying life and having fun are the intriguing constituents of this dimension. Differently from indulgence representing a propensity to pursue human desires (naturally) embedded underneath

enjoyment in life and having fun, restraint reflects a need for such desires or for subjecting them to strict social regulations (Hofstede, 2010).

Tax performance

There are three categories of tax-performing countries (high, average and low) based on the tax collection performance at any point in time (Haldenwang & Ivanyina, 2015). Moreover, there is some country-specific information for the largest number of developing countries in respect of revenues and tax systems. Typically, compared to the established values, the tax revenue to the GDP ratio (the tax ratio) gave an idea about recent tax performance at a given point in time. However, tax performance changes over time due to certain factors, such as a tax compliance level, a tax morale degree and a tax evasion rate. Consequently, there is a link between performance, compliance, morale and evasion, all being related to taxation (Luttmer & Singhal, 2014) and R. G. Cummings, J. Martinez-Vazquez, M. McKee and B. Torgler (2008).

Tax compliance involves a process whereby taxpayers submit all necessary tax returns. It involves an accurate declaration of all appropriate income and the payment of a correct tax due in line with the applicable tax laws (Masud, Aliyu & Gambo, 2014). Conversely, tax evasion simply means the illegal nonpayment or underpayment of tax, whereas tax morale describes the inner conviction of taxpayers to accept, reject or neglect tax duties (Anca & Margareta, 2013).

When considering how tax morale might influence taxpayers' decisions, an important fact to note is a possibility of inner motivation which may encourage people to comply with the provisions of tax laws (Luttmer & Singhal, 2014). The evidence that supports the causal link between fiscal autonomy and tax morale, which eventually generates greater tax compliance with less tax evasion, was produced by B. Torgler and F. Schneider (2007). Thus, tax morale and tax compliance correlate positively and tax performances also increases with an increase in tax compliance. Notably, tax performance and tax compliance are used interchangeably.

Theoretical Background

This study hinges upon Hofstede's theory of global values, as it captures the predominant variables in the study that include masculinity: the UA, indulgence, individualism, long-term orientation and the power distance.

Theory of global values

G. Hofstede (1980; 2001; 2010; 2013), a Dutch psychologist, came up with the theory of global values in 1980. The theory proposes that the international value system should have six basic clusters. It deals with how inequality (the power distance), uncertainty (UA), relationships with a group (individuality), the traits exhibited as a result of being born as a girl or a boy (masculinity/femininity), the extent of being futuristic (LTO) and plight to enjoy life (indulgence) are handled among different national societies.

For each country surveyed, G. Hofstede (1980) came up with country-based scores (the UA, the power distance, masculinity and individualism) as the four relevant dimensions of culture. Indulgence and the LTO were subsequently added (Hofstede, Hofstede & Minkov, 2010). R. Inglehart (1990) further built on Hofstede's initial work in order to make the framework more conventional.

Hofstede's cultural dimensions have been widely used to explain the effect of culture in various topics (Hofstede, 2001). The theory considered useful in measuring culture (Kirkman, Lowe & Gibson, 2006) and G. Hofstede (2013) was highly rated, so that no theory and/or cultural model could completely replace Hofstede's national cultural dimension theory in cultural studies (Huang, 2016), because most cultural theories stemmed therefrom. Besides, the theory is dynamic and always progresses at the same rate with the changes imposed by a time trend.

Yet, these cultural dimensions were subjected to criticism, probably because the approach was regarded as blunt (Jackson, 2011) or for some other reasons. However, since no significant decline was recorded in the relevance of the theorized variables

(Tung & Verbeke, 2010), the theory nonetheless provides a significant initial point for understanding cultural values.

Undoubtedly, culture plays an indispensable role in the development of humans and human society and its role in various fields, including taxation, cannot be overemphasized, either. Thus, the power of culture cannot be ignored (Huang, 2016), because it has an impact on everything that people do or decide not to do. Such a decision cuts across the tax context; for instance, tax compliance describes a situation where people decide to pay taxes, whereas tax evasion is a product of people's decision not to pay tax. The suitability of Hofstede's theory in explaining tax compliance and evasion behavior was supported in previous studies, such as G. T. Tsakumis, A. B. Curatola and T. M. Porcano (2007) and A. H. Suhaila (2016).

Empirical Studies

Minimal research efforts have been made towards establishing a link between culture and tax performance. The available studies have attempted this by building the implicit elements of culture into tax compliance behavioral models. These elements indicate taxpayers' thoughts about and perceptions of taxation that invariably shape their behaviors and attitudes. Along the same line, some researchers have tried to control the influence of these elements in the model of tax behavior (Bobek, Hageman & Kellier, 2012), having become aware of the fact that the implicit cultural characteristics evidenced by the expectations of close ones (subjective norms) and general societal expectations (injunctive norms) exert an influence on tax decisions.

According to D. Matsumoto (2007), cultural dimensions with wide acceptability and applicability in social sciences were first identified by G. Hofstede (1980). These cultural dimensions have been examined by various accounting studies, including C. W. Bame-Aldred *et al* (2011); C. Rarick, G. Winter, I. Nickerson, G. Falk, C. Barczyk and P. K. Asea (2013); L. A. Agbetunde, S. Ojediran and A. O. Fadipe (2016); and A. H. Suhaila (2016), among others.

The effect of culture on tax compliance was examined by R. G. Cummings, J. Martinez-Vazquez, M. McKee and B. Torgler (2004), who found that, irrespective of what transpired between the Government and taxpayers in terms of fiscal exchange, cultural norms might independently affect a tax compliance behavior. They argued that a tax compliance decision was anchored in a "general tax belief", which formed a part of the implicit element of culture. In the same vein, several studies also established the fact that cultural differences have an influence on tax compliance decisions (Agbetunde, Ojediran & Fadipe, 2016) and J. O. Alabede, Z. Z. Ariffin and K. Idris (2011). However, some researchers (Matsumoto, 2007) and R. G. Cummings *et al* (2008) are of the opinion that the relationship between these cultural values and tax performance levels is not understood well, because the concept of culture is complicated and multifaceted.

Contrary to this, a study by B. Torgler and F. Schneider (2007) reported that tax compliance was associated with culture. That finding pertained to Switzerland, Belgium and Spain, where the relationship between culture and tax morale is compliant with tax laws. The study revealed that, although cultures were diverse among those European countries, it was possible for culture and national pride to influence tax morale in complying with tax laws. Moreover, the significance of culture in tax matters was reaffirmed by A. Lewis, S. Carrera, J. Cullis, and P. Jones (2009) in their comparative analysis of respondents from the UK and Italy.

Having been convinced empirically that tax performance is affected by taxpayers' cultural characteristics (beside the conventional institutional factors), national cultural dimensions could be argued to remain relevant for the explanation of taxpayers' behavior in a bid to ameliorate tax performance. Yet, it is still limited in the tax context and requires a further exploration.

L. Tang and P. E. Koveos (2008) updated Hofstede's framework based on economic, dynamic and institutional stability. The findings revealed that the LTO created an increase in tax performance, whereas a positive relationship was also found between the power distance and tax performance.

Hofstede's work was also highlighted by B. L. Kirkman, K. B. Lowe and C. B. Gibson (2006) as very influential and suitable for classifying culture. With Hofstede's (1980) cultural dimensions, A. H. Suhaila (2016) used the PLS-SEM in New Zealand to examine the use of culture by tax professionals in making ethical decisions. The findings suggested that culture variables significantly influenced the intention to comply with tax laws. Such uncovered culture variables included the UA, subjective norms, masculinity, perceived behavioral control and the attitude towards tax compliance. In another study on culture carried out in 50 countries, G. T. Tsakumis *et al* (2007) used descriptive statistics and found out that tax evasion was common with the countries that had demonstrated low masculinity, a high UA, a high PD, low masculinity and low individualism. In the same vein, the evidence from a study of 3000 companies in 31 countries by C. W. Bame-Aldred *et al* (2011) revealed the fact that the culture of a collectivistic nature lacked the tendency to evade tax. Therefore, both by inference and by way of analogy, the culture that is individualistic in nature has a great potential towards tax evasion, perhaps for a personal benefit.

Specifically pertaining to developing countries, L. A. Agbetunde and L. B. Adedokun (2014) established a need for research efforts on taxpayers' attitudes towards culture and tax compliance, because of the multiethnicity characteristics. W. N. Hussein (2018) responded to this by studying the relationship between the national culture of and tax evasion in Iraq by using the Analysis of Moment Structure (AMOS). The findings he had come to revealed that national culture (neither for economic nor for administrative reasons) was the major reason for tax evasion. This creates a strong link between tax compliance and cultural subjective norms. Cultural studies are relatively strange to the tax literature and the studies bringing national culture into a relationship with tax performance by applying Hofstede's framework are nonexistent in Africa. Thus, beside controlling institutional and economic variables, this study also examined the effect of cultural values on tax performance in Africa.

METHODOLOGY

Model

A model hinged on Hofstede's theory of global values, which measured national culture against the six value dimensions, i.e. the power distance (PD), masculinity (MASC), individualism (IDV), the UA, the LTO and indulgence (IND), was constructed in this study. The scores for the value dimensions were obtained from Hofstede's framework, which the study by G. T. Tsakumis *et al* (2007) had been anchored in. However, the tax effort and the economic development level were incorporated into the model so as to control the effect of the nonbehavioral aspect of tax performance. See C. Haldenwang and M. Ivanyina and O. Kodila-Tedika and M. Mutascu (2015) for the relevance of these control variables.

The functional model is as follows:

$$TXPFM = f(NAC_{it}, \mu) \quad (1)$$

When specified, it becomes:

$$TXPFM_{it} = \beta_0 + \beta_1 UA_{it} + \beta_2 MASC_{it} + \beta_3 IDV_{it} + \beta_4 PD_{it} + \beta_5 LTO_{it} + \beta_6 IND_{it} + \beta_7 TEF_{it} + \beta_8 ECD_{it} + \mu_t \quad (2)$$

where $TXPFM_{it}$ is tax performance, whereas UA , $MASC$, IDV , PD , LTO and IND remain as previously defined. The control variables are as follows: TEF = Tax Effort; ECD = Economic Development. The subscript 'it' indicates both the cross-sectional and the time dimensions of the panel data set. Note that high tax performance indicates low tax evasion, and vice versa.

The quantitative research design was adopted while the data were analyzed by using the Panel-Corrected Standard Error (PCSE) and descriptive techniques in order to espouse the strength of culture on tax evasion by using a total of 10 sampled countries out of the 54 countries in Africa. The selection of these countries (Nigeria, Ghana, Burkina Faso, Cape Verde, Senegal, Sierra Leone, Mozambique, South Africa, Tanzania and Egypt) was conducted based upon the regional representation and availability of the needed scores pertaining to PD , UA , $MASC$, IDV , LTO and

IND. More importantly, West African countries were more represented because of their cultural strength and low tax performance (Fiawoo, 2018).

Measurement of variables

The most prominently used tax performance indicator is the tax-to-GDP ratio, due to the availability and reliability of revenue and the GDP data. Thus, this study measured tax performance as a percentage of tax revenue on the GDP, while the culture variables were modeled around the sets of the international value systems measured in a manner in which different national societies treat inequality (the power distance), how they cope with uncertainty (UA), their relationships with a group (individuality), the traits exhibited as a result of being born as a girl or as a boy (masculinity/femininity), the extent of their being futuristic (LTO) and their plight to enjoy life (indulgence).

The explanatory variables are denoted in this study by *PD*, *IDV*, *UA*, *MASK*, *LTO*, *IND*, and additionally two control variables including the tax effort (*TEF*) and economic development (*ECD*). All the dimensions of culture were measured by using the country-specific values obtained from the updated Hofstede database of global values. Each of the national culture dimensions was scored on a 0 to 100 scale.

However, the tax effort and economic development were used to control the effect of the nonbehavioral aspect of tax performance. The tax effort was measured via tax revenue as a percentage of non-tax revenue, whereas economic development was measured by the GDP *per capita* as its traditional indicator. The data used in this study were secondary by nature and were collected from the World Bank's database, Hofstede's database, the OECD database and the websites of the selected countries' revenue authorities.

The sample period of these variables was seven years, covering the time span from 2010 to 2016. All the variables in this study were logged before the analysis, as well.

RESULTS AND FINDINGS DISCUSSION

Summary statistics

The summary statistics detailing the statistical properties of the variables used in this study as contained in Table 1 were interpreted in terms of the mean, maximum and minimum values.

Specifically, it shows that the mean value of tax performance is 15.24%, and the minimum and maximum values are 1.5% and 27.3%, respectively. This indicates that, on average, Africa has relatively low tax performance during the observation period. Moreover, Nigeria had the lowest tax performance (1.5%), while South Africa had the maximum value of 27.3% (the highest tax per GDP). The power distance variable reveals a high level of inequality in African societies (the average = 71.9%), with Mozambique demonstrating the highest inequality of 85% and South Africa demonstrating the lowest value of 49%.

Burkina Faso, Mozambique, and Ghana have the lowest level of individualism (15%), while South Africa has the highest level of individualism (65%). Masculinity, which is a value attributed to achievement and rigor, averaged 43.6% for Africa. However, the mean value of the UA in national culture in Africa is 54.3%, while the maximum and minimum values are 80% and 40%, respectively. Egypt has the highest level of the UA (highly prioritizing routines or procedures), while Cape Verde has the highest level of flexibility and informality (40%).

The average, minimum and maximum values of Africa in terms of the LTO are 18.5%, 4% and 34%, respectively. This implies that African countries are, on average, highly oriented towards future rewards. Specifically, Ghana is a short-term oriented country (4%), while Tanzania is a long-term oriented country (34%) (Table 2). The average of 55.3% for indulgence indicates a moderate level of natural human desires to enjoy life in Africa. However, the capacity to collect taxes is very low in Africa (4.25 on average), while the GDP *per capita* has a mean value of 2099.07, and the minimum and maximum values of 382.1 and 7976.5, respectively.

Table 1 The summary statistics (combined)

Variable	Mean	Minimum	Maximum
TXPFM	15.24	1.5	27.3
PD	71.9	49	85
IDV	25.5	15	65
MASC	43.6	15	63
UA	54.3	40	80
ITO	18.5	4	34
IND	55.3	4	84
TEF	4.25	1.1	7.4
ECD	2099.07	382.1	7976.5

Source: Authors

In order to test the existence of multicollinearity among these variables, the Variance Inflation Factor (VIF) was computed, which shows that the VIF is less than 10 for all the variables, suggesting that the independent variables in the model are not highly correlated with one other.

Table 2 The summary statistics (country-specific)

COUNTRY	PD	IDV	MASC	UA	LTO	IND
Burkina Faso	70	15	50	55	27	18
Cape Verde	75	20	15	40	12	83
Egypt	70	25	45	80	07	04
Ghana	80	15	40	65	04	72
Mozambique	85	15	38	44	11	80
Nigeria	80	30	60	55	13	84
Senegal	70	25	45	55	25	65
Sierra Leone	70	20	40	50	18	46
South Africa	49	65	63	49	34	63
Tanzania	70	25	40	50	34	38

Source: Authors

The model estimation result presented in Table 2 shows that the *PD* is negatively and significantly related to the tax performance proxied with the *TXPFM*, which indicates that a percentage increase

Table 3 The Model Estimation (PCSE)

Variable	Coefficient	Panel-corrected Std. Error	Z	P> z	[95% Conf. Interval]	
PD	-0.5408763	0.0887755	-6.09	0.000	-0.7148732	-0.3668794
IDV	-0.2087147	0.0773609	-2.70	0.007	0.3603393	-0.0570901
MASC	-0.0193528	0.032008	-0.60	0.545	-0.0820874	0.0433817
UA	0.0675718	0.0571251	1.18	0.237	-0.0443913	0.179535
LTO	-0.3794544	0.0742491	-5.11	0.000	-0.5249799	-0.2339289
IND	0.0921027	0.0226074	4.07	0.000	0.047793	0.1364124
TAXEFF	3.3789	0.5110494	6.61	0.000	2.377262	4.380538
GDPGAP	0.0008781	0.0003967	2.21	0.027	0.0001007	0.0016556

Group variable: *c_id*

Number of obs = 70

Time variable: year

Number of groups = 10

Panels: correlated (balanced)

Obs per group: min = 7

Autocorrelation: no autocorrelation

avg = 7 max = 7

Estimated covariances = 55

R-squared = 0.6787

Estimated autocorrelations = 0

Wald chi²(8) = 2179.24

Estimated coefficients = 9

Prob> chi² = 0.0000

Source: Authors

in the PD (the increase in the level of inequality in society) in Africa will adversely affect the tax performance of the continent by -0.54% (p-value = 0.000). The same significant negative relationship (coeff. = -0.21; p-value = 0.007) is also present between individualism (IDV) and the TXPFM. By implication, therefore, a percentage increase in individualism inversely affects tax performance in Africa. However, masculinity (MASC) and the UA were not significantly related to the TXPFM, (coeff. = -0.019%; p-value = 0.545 and coeff. = -0.068%; p-value = 0.237), respectively. Thus, an increase or decrease in the degree of masculinity and the UA does not significantly influence tax performance in Africa. U ovom i narednom pasusu treba srediti navođenje ovih vrednosti, posebno negativnih brojeva

Moreover, the LTO significantly and negatively propels the TXPFM (coeff. = -0.379%; p-value = 0.000). This implies that a percentage change in the virtues oriented towards future rewards reduces tax performance in Africa by 0.37 percent. Contrastingly, it is only indulgence (IND) that has a significant positive influence on tax performance in Africa (coeff. = 0.09; p = 0.0000). By inference, therefore, an increase in the level of natural human desires will increase Africa's tax performance and GDP ratio by 0.09 percent.

The evidence from Table 3 further reveals that both control variables (TEF and ECD) are significantly related to the TXPFM, thus indicating the fact that the effort of the tax authorities and the magnitude of the recorded economic development are the reasonable determinants of tax performance in Africa.

Though the individual effects of the proxies of national culture on tax performance are mixed, the Wald χ^2 (8) of 2179.24 and the associated P-value of 0.0000 indicate a joint, statistically significant effect of PD, IDV, MASC, UA, LTO, and IND on tax performance at a 1% significance level. The significant nature of the Wald test implies that the model is fit.

Findings discussion

The interplay between national culture and tax performance in Africa from 2010 to 2016 was

examined and Gert Hofstede's theory of global values forms the basis for the selection of the culturally specific variables used. The results reveal indulgence as the only cultural variable with a significant positive impact on tax performance, whereas the PD, IDV and LTO are significant, but negative. However, the MASC and UA are insignificant in determining tax performance in Africa.

The power distance is negatively related to tax performance, thus suggesting that an increase in the power distance tends to reduce tax performance. This further implies that the more inequality recorded in power distribution, the lesser the tax performance experienced in Africa. This finding is in tandem with that of G. T. Tsakumis *et al* (2007), which reveals a low-tax performing country as the one that possesses a high-power distance (PD). On the other hand, the inverse relationship negates the findings of A. H. Suhaila (2016), and L. Tang and P. E. Koveos (2008), which disclose a positive relationship between the power distance and tax performance.

Also, individualism exerts an influence on tax performance, negatively indicating the fact that a rise in the emotional independence of African people tends to reduce their tax performance, i.e. a reduction in the level of collectivism is likely to hinder tax performance in Africa. This finding is in tandem with the studies of C. W. Bame-Aldred *et al* (2011), which reveal that a collectivist culture reduces the rate of tax evasion, while an individualistic culture creates an avenue for poor tax performance due to a high tendency for tax evasion in such a society.

The rate of masculinity and the UA in national culture in Africa does not show a significant influence on tax performance. By extension, therefore, the masculine/feminine values (the emotional implications of being a girl or a boy) and the level of bureaucracy due to a high UA are not significant in exerting an influence on tax performance in Africa. This result is in disagreement with the findings of A. H. Suhaila (2016) and G. T. Tsakumis *et al* (2007), which show a low-tax performing country as one with low MASC and high UA.

The inverse relationship between long-term orientation (LTO) and tax performance connotes

that an increase in the level of future orientation in Africa results in a decrease in tax performance. This contradicts the findings of L. Tang and P. E. Koveos (2008), according to which an increase in the LTO creates an increase in tax performance. However, the positive significant association between indulgence and tax performance derived from this study conforms with *a priori* settings, holding that higher indulgence and lower tax evasion go hand in hand across countries, which in turns indicate high tax performance. This implies that the cultural values attached to enjoying life and leisure enhance taxpayers' tax morale, thus engendering an appreciable rise in the tax performance level in Africa.

It is also noteworthy that the level of the effort put in place by the Government through its tax authorities and the level of the economic development of the country used as the controls in this study are also good indicators of an increase in tax revenue in Africa.

CONCLUSION

The conducted analysis shows that this study supports the national culture ideas proposed by G. Hofstede as useful in explaining tax performance levels across African countries. Hence, it is concluded that the culture variables that impact tax performance negatively and significantly are inclusive of long-term orientation, individualism and the power distance, while masculinity and uncertainty avoidance are insignificant in determining tax performance in Africa. However, only indulgence has a positive statistically significant impact on tax performance.

Hence, indulgence is (positively) statistically significant, which is a refutation of the Hypothesis 2. However, individualism and the power distance are statistically significant, which is also in disagreement with Hypothesis 1. The insignificance of masculinity and uncertainty avoidance goes in line with Hypothesis 1. Thus, the study describes a tentative cultural profile of a high-tax performing country (i.e. a low-tax evasion country) as the one with a low PD,

low IDV, low LTO, moderate UA & MASC, and high IND. This profile may serve as a framework for future research efforts in cross-cultural tax studies.

Based on the conclusion reached, it is recommended that specific attention should be paid to individualism in the future tax structure design and those concerning tax compliance legislation. The tax authorities should focus on cultural clusters while embarking on tax education so as to address culture-specific issues, whereas effective tax efforts should be put forward by the tax authorities in Africa in order to enhance tax performance. Moreover, tax administrators should work towards a fast, cultural shift in attitudes and behavior towards taxes by reaching the young generation in schools, knowing full well that to shift tax culture without education at an early age is very difficult to do.

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FISCAL CONSOLIDATION IN THE EU-28: MULTIYEAR VERSUS COLD-SHOWER EPISODES

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In the aftermath of the global recession, the need for fiscal consolidation in order to reduce budget deficits and the public debt has intensified, but with the aim to make the measures applied not affect the further slowdown of the economic activity in the European Union (EU) economies. In this paper, the episodes of the fiscal consolidation in the period from 1990 to 2015 in the 28 EU economies are analyzed, differentiating the multiyear episodes against the one-year (i.e. cold shower) episodes and their effects before and after the global recession. The episodes of the fiscal consolidation that result in successful (a reduction in the cyclically-adjusted primary budget deficit) and expansionary effects (the GDP growth) are identified, thus empirically confirming the existence of non-Keynesian effects. The stated affirms the idea that the achievement of fiscal sustainability by using austerity measures does not necessarily imply contractions in economies and that the development of a fiscal architecture in the EU by establishing complementarity between the national and supranational fiscal rules is of extraordinary importance in the post-crisis period.

Keywords: fiscal consolidation, EU economies, fiscal rules, non-Keynesian effects

JEL Classification: H30, H62, F15

INTRODUCTION

In the aftermath of the global economic and financial recession, the need for fiscal consolidation in order to reduce the budget deficit and the public debt has intensified, but with the aim to make the measures applied not affect the further slowdown of the economic activity in the European Union (EU) economies. Therefore, the analysis of the fiscal

adjustment channels and the implemented episodes of the fiscal consolidation in the period before and after the recession can provide us with the knowledge of the effects of the undertaken measures, and, in a broader context, the effects of the success of the discretionary fiscal policy.

A fiscal consolidation episode is a period of fiscal adjustment, which can be directed towards a reduction in public spending and/or tax growth, with the aim of reducing the cyclically-adjusted primary deficit and public debt. The specifics of each episode of fiscal consolidation are determined by: the

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duration (multiyear episodes *versus* a cold shower), the composition of public spending/public revenues, the effects (expansionary *versus* contractionary effects, and successful *versus* unsuccessful effects), and the period of application (recession *versus* expansion). The heterogeneity of the fiscal adjustment measures in the EU stems from a lack of a single fiscal policy at the EU level. The pre-global recession contracts, the Maastricht Treaty (1992) and the Stability and Growth Pact (1997), left room for a potential fiscal irresponsibility in the EU economies. The two key rules of the Maastricht Treaty reading that a budget deficit must not exceed 3% of the GDP and that the public debt must not exceed a total of 60% of the GDP were insufficient to guarantee fiscal sustainability. After the spillover effects of the global recession on the fiscal sphere in the EU, a new fiscal framework (Two-Pack, Six-Pack, Fiscal Compact 2012, European Stability Mechanism 2012) were defined with clear preventive and corrective arms, as well as the intention of introducing the EU fiscal rules in the national legislations.

The aforementioned contracts and the circumstances that further intensified the importance of the study of fiscal consolidation in the EU also refer to a loss of the national monetary policies as the instruments for macroeconomic stabilization in the monetary union (for more information about the monetary phases and the monetary union, see the paper by (Beker Pucar & Glavaski, 2019). Despite the flexibility of the national fiscal policies, the implemented fiscal policy measures could not absorb the asymmetric shocks generated in the crisis conditions, although the episodes of fiscal consolidation clearly pointed to the fight for the achievement of fiscal sustainability by implementing austerity measures.

In this regard, this paper analyzes the episodes of the fiscal consolidation in the period from 1990 to 2015, in the context of the differentiation between the multiyear episodes the one-year (i.e. cold-shower) fiscal consolidation episodes and their effects in the 28 EU economies before and after the global recession.

This research study is aimed at identifying whether the cold showers or multiyear episodes of the fiscal

consolidation were more successful in the reduction in the cyclically-adjusted primary budget deficit, and whether they had any expansionary or contractionary effects before and after the global recession. Although the fiscal consolidation in the pre-crisis period with the lessons of the post-crisis period is relatively often analyzed in the literature (Barrios, Langedijk & Pench, 2010), this paper fills the gap in the literature by making a comparison of the implemented episodes and their effects in the periods before and after the global recession, sublimating the overall measures in the fiscal sphere in the aftermath of the global recession.

The basic research hypothesis states:

H1: There are successful and expansionary effects of the cold-shower and multiyear episodes of the fiscal consolidation before and after the global recession.

Namely, this assumption refers to the existence of non-Keynesian effects in the EU economies, ensuring recommendations for policymakers that not all austerity measures result in contractionary effects. Additionally, the following hypothesis that is:

H2: There are differences in the duration, structure and effect of the fiscal consolidation before and after the global recession.

The hypotheses are tested by using scientific-research instrumentation, based on the methods of analysis and synthesis, descriptive statistical analysis and the method of comparison.

The paper structure is defined as follows. The first part shows a reference discourse in relation to the time, way and effects of the fiscal consolidation episodes. In the second part, the theoretical framework of the fiscal consolidation channels on the demand and supply sides is presented. The third and fourth parts are focused on the specifics of the EU fiscal framework - in the third part, the basic fiscal rules in the EU are sublimated, while in the fourth part, the empirically tested effects of the fiscal consolidation episodes before and after the recession are shown. The last part of the paper synthesizes the basic conclusions.

LITERATURE REVIEW

Fiscal consolidation implies a measure of the fiscal adjustment aimed at reducing budget deficits and the public debt through a reduction in public spending or tax growth, taking into account the cost of the slowing-down economic activity slowing down. It raises the question of whether a reduction in public spending or tax raising is a better strategy for stabilizing the budget deficit and avoiding a recession. In the period after the global recession, the economies were faced with the need for more drastic budget deficit and public debt cuts; however, there was a fear that fiscal consolidation might cause a new recession. The majority of the EU economies finally implemented fiscal consolidation; yet, according to the authors A. Alesina, O. Barbiero, C. Favero, F. Giavazzi and M. Paradisi (2015a), if they did the best thing is still not quite clear.

The basic fiscal consolidation issues in the theoretical and empirical literature can be summarized as follows:

- duration of fiscal consolidation,
- manner of fiscal consolidation, and
- effects of fiscal consolidation.

The answer to the first question is endogenous. Namely, when a crisis happens, it automatically requires measures to overcome the recession. So, fiscal consolidation is usually introduced during a recession and gains a procyclical character. Empirically speaking, a sharp rise in the public debt and the budget deficit is easier to treat than accumulated and prolonged problems in public finance. In this context, A. Alesina (2010) showed that certain fiscal consolidation episodes, especially those conducted on the side of public spending cuts, had not caused the recession. Namely, the author relativizes the necessity for the existence of a trade-off between the stabilization function and fiscal consolidation. G. Corsetti, K. Kuester, A. Meier and C. Muller (2010) explain that a reduction in public spending increases expansionary effects due to the anticipation of lower inflationary pressure and a stable long-term interest rate. By using the ex-post analysis of fiscal consolidation, A. Alesina

and S. Ardagna (2010) discovered that a reduction in public spending aimed at reducing the budget deficit had not caused the recession, but quite the opposite, it had caused expansion. These results refer to the existence of non-Keynesian effects, i.e. a reduction in public spending aimed at reducing a budget deficit may have positive effects in the context of economic growth through specific transmission mechanisms. In the following papers, the authors claim that there are non-Keynesian effects: F. Giavazzi and M. Pagano (1990); A. Alesina and R. Perotti (1998); A. Alesina and S. Ardagna (1998; 2010); on the other hand, there are those who believe that non-Keynesian effects are very unusual: J. Guajardo, D. Leigh and A. Pescatori (2011); W. Yang, J. Fidrmuc and S. Ghosh (2015).

In connection with the second question, A. Alesina, G. Azzalini, O. Favero, C. Giavezzi and A. Miano (2017) demonstrate that, if fiscal consolidation is based on the permanent growth of tax rates, it is more expensive in terms of output losses in the short time compared to the fiscal consolidation based on a permanent reduction in public spending. It was also confirmed in the works of J. von Hagen, A. Hughes Hallett and R. Straush (2002); R. Maroto and C. Mulas-Granados (2007); European Commission (2007); M. Kumar, D. Leigh and A. Plekhanov (2007).

A possible explanation was given by the European Commission (2007): a reduction in public spending is most commonly related to an increase in efficiency in the public sector and may send signals to financial markets for long-term fiscal sustainability. Additionally, although there is a consensus in the literature in relation to higher costs in the case of fiscal consolidation based on the permanent growth of tax rates, the issue of the composition of public spending and public revenues still remains important. The available research studies dedicated to this topic (Alesina, Favero & Giavazzi, 2015a) are oriented towards the separation of public spending into the two components:

- consumption and investment - they include all public spending from which the government expects a positive yield, either financially or in terms of growing welfare (the consumption

of public goods, salaries in the public sector, contributions to insurance, expenses for education, healthcare, road reconstruction, railways, hospitals, commercial and industrial buildings); and

- transfers - they include all public spending from which government does not expect direct economic benefits (social protection, social benefits in cash or in nature, scholarships, subsidies).

On the other hand, public revenues may be separated into the following components:

- direct taxes - they include all public revenues having distortions in terms of work preference (income, profits, capital gains, the property tax (Tanasić, 2019);
- indirect taxes - they include all public revenues not having distorting effects (value added tax, tax turnover, taxes, registration, natural monopoly profit tax).

Empirical studies (using the example of the OECD countries in a study by A. Alesina *et al* (2015b) indicate that there is no significant difference in the effects of direct and indirect taxes on economic growth and a reduction in deficits and the public debt, whereas transfers also have similar (contractionary) effects. Only consumption and investments usually have no contractionary effects, i.e. there are non-Keynesian effects in the short term - a reduction in public spending in the part of consumption and investment does not necessarily imply a reduction in economic growth in the short run. Finally, the question of how to implement fiscal consolidation relates to a decision on whether to implement fiscal consolidation as a one-year measure (i.e. a cold shower) or gradually, in terms of multiyear episodes. A. Alesina *et al* (2015b) showed that non-Keynesian effects had been identified in multiyear episodes, rather than in "stop-and-go" (i.e. cold-shower) changes in public spending and taxes.

The subject matter of the third question relates to the successful/unsuccessful and expansionary/contractionary effects of fiscal consolidation. Success is determined by the effects on a budget deficit and the public debt, whereas the term *expansionary* is

determined by effects on the output. According to a paper by A. Alesina and S. Ardanga (2010), the fiscal adjustment period is the period in which the growth of the cyclically-adjusted primary budget is at least 1.5% of the GDP. Fiscal consolidation is considered as successful if the cumulative reduction of the public debt in the GDP exceeds 4.5% of the GDP three years after the fiscal consolidation has been imposed. In the opposite case, fiscal consolidation is unsuccessful. Fiscal consolidation is considered to be expanded if the average economic growth during the implementation period and in a period of two years after that exceeds 75% of economic growth in all fiscal consolidation episodes. In the opposite case, such fiscal consolidation is contractionary.

In this paper, the results of the cold-shower and multiyear episodes of fiscal consolidation in the context of their success (non-success) and expansionary (contractionary) effects in the period before and after the global recession are analyzed.

THEORETICAL FRAMEWORK: FISCAL CONSOLIDATION CHANNELS

With the aim of further analyzing the mechanisms through which fiscal consolidation episodes demonstrate expansionary/contractionary effects, and how successful they are in the process of reducing a cyclically-adjusted budget deficit, the channels of the influence on the demand side and on the supply side are presented. The expansionary effects of fiscal consolidation can be seen on both sides of the channel (Alesina & Ardagna, 2010). On the demand side, fiscal consolidation could be expansionary if agents believe that fiscal tightening is the result of the major changes in the fiscal policy, eliminating the need for undertaking new measures in the future. Tax growth or a reduction in public spending is perceived as a *less bad* scenario from the point of view of the risk of an even-deeper fiscal tension. Consumers believe that this scenario incurs lesser costs, and that, indirectly, their available income is higher (if the measures of stronger fiscal tightening must be applied, those costs would be a reality for consumers, which they are not

in these circumstances). Higher income implies more private consumption, which is determined by the existence of “liquidity constrained” consumers or a lack of them.

Whether consumers will behave in accordance with the Keynesian recession expectations during fiscal consolidation or there will be non-Keynesian effects depends on the debt level (Sutherland, 1997). Fiscal consolidation leads to the expectations of lower future taxes; however, if the levels of the public debt are relatively low, consumers do not expect significantly lower taxes in the future, thus creating common Keynesian effects (reducing current consumption, inducing negative effects on the output). In the case of the high levels of the public debt and higher cuts in public spending, agents act in accordance with non-Keynesian effects: believing that they will pay less in taxes in the future, they increase their current spending, thus generating growth.

The second channel is in relation to the expectations cherished for the interest rate. If agents believe that fiscal consolidation is credible and affects a reduction in the public debt, it is possible that a reduction in the interest rate on state bonds will also take place. Private demand may grow if the real interest rate is reduced for the private sector, as a consequence of a reduction in the real interest rate on state bonds. Reducing the real interest rate on state bonds may affect the growth of bond values, which ultimately increases the financial welfare of agents, which on its part may cause a boom in consumption and investments. Therefore, in some cases, expectations for changing the regime of the fiscal policy may positively affect welfare through a reduction in long-term interest rates. The credibility of the economic policy designers is also the key moment, or the third channel.

On the supply side, the effects of fiscal consolidation pertain to the labor market and the effects of tax hikes and/or a reduction in public spending on individual work supply. If there is a decrease in public spending, it means a reduction in the number of those employed in the public sector who have a difficulty in finding a job in the private sector. Those who remain employed in the public sector are faced with reduced salaries.

Both effects may positively affect the private sector, i.e. larger workforce supply allows for a reduction in the salaries of employees in the private sector, and the growth of investments, profits, and competitiveness. The second channel, through tax hikes, (in particular income tax) has consequences for a higher burden for employers and lesser net wages for employees. Those effects might suppress profits and investments, as well as competitiveness, and they may also have overall negative effects on welfare.

In relation to the composition of fiscal consolidation (public spending on consumption, investment and transfers, and taxes on direct and indirect taxes) some of them might have effects on a recession/expansion. A reduction in public spending and investment will have a different influence on economic growth, depending on productivity in the public sector. A reduction in public spending and investment has an influence on consumers’ expectations related to lower taxes in the future, changing the relative price ratio of public goods to private goods, given the assumption that public and private goods are subsidies. The expectations that public goods will be relatively cheaper generate higher consumption and economic growth. A reduction in transfers reduces households’ income, reducing spending as well. The growth of direct and indirect taxes according to the effects on economic growth only differs in distortive effects, i.e. indirect taxes do not have distortive effects, because they do not change the marginal rate of substitution.

The described channels are considered to be important enough to explain the expansionary or contractionary effects of fiscal consolidation. A. Alesina, S. Ardagna, R. Perotti and F. Schiantarelli (2002) empirically demonstrated that the size of the fiscal shock due to the fiscal consolidation was large enough to cause positive effects in terms of private consumption and negative effects due to the investment tax growth. Which effects are larger in a concrete economy depending on the composition of fiscal consolidation leads to expansionary or contractionary effects on economic growth. The race between the channels of expectation and the labor market channel is constantly occurring in fiscal consolidation, in which the labor market channel more often wins (Ardagna, 2004).

FISCAL RULES IN THE EU

Fiscal rules at the supranational EU level were built gradually and became more rigid over time, especially so in the period after the global recession. With the aim of fulfilling the fiscal rules and securing fiscal sustainability, fiscal consolidation became an acute topic in many economies.

The pre-global recession contracts, the Maastricht Contract and the Stability and Growth Pact, left room for a potential fiscal irresponsibility in the EU economies. The two key rules of the Maastricht Treaty's fiscal sphere (that the budget deficit must not exceed 3% of the GDP, and the public debt must not exceed 60% of the GDP) were powerless to guarantee fiscal sustainability. Hence, the Stability and Growth Pact of 1997 (together with the reform of 2005) had a predominantly preventive character, respecting the principles of democracy and flexibility, retaining fiscal policies within the sovereign frames. Given the need for collective discipline, the Stability and Growth Pact retained its frames at the level of coordination by using the two types of arms. The preventive arm involved the strengthening of supervision over the budgetary positions and the coordination of the economic policies, whereas the corrective arm implied the defining of the proceedings in the case of an excessive deficit. The escalation of the global recession and the violation of the reformed Stability and Growth Pact conditioned the introduction of the new mechanisms of governance, with the focus on the financial stabilization mechanisms in the countries with fiscal problems. The mechanisms would only be initiated according to the strict rules and if the Eurozone were endangered, and they would represent a wider framework of action, substantially including the fiscal sphere. Firstly, the European Semester was established in 2010 as a part of the EU fiscal policy coordination mechanism. Secondly, the European financial stability mechanism (EFSM) and the European Financial Stability Fund (EFSF) were established. Moreover, in 2012, the European Stability Mechanism (ESM) was established, defined by the international agreement between the Eurozone members, with a total capacity of 700 billion euros. The ESM was aimed at providing the economies with preventive assistance, adding

loans, buying Euro-member bonds on the primary and secondary markets, and providing loans to the governments. The rescue mechanisms (bail-out) was used to support the economies with difficulties in accession to international capital markets or those that had completely lost access to them (such as Greece, Portugal, Ireland, Cyprus, and Spain). The ESM finally replaced the previously defined EFSM and EFSF programs and the new Eurozone Recovery Program started being exclusively implemented through the ESM.

In the context of the fiscal rules, a tougher fiscal framework is defined through the six-pack and two-pack reforms and the Fiscal Compact (2012). According to the Fiscal Compact, the EU Member States are obligated to maintain a budget balance or a budget surplus. The limit is prescribed by a structural deficit, which must not exceed 0.5% of the GDP, or 1% of the GDP if the public debt is below 60% of the GDP. If a country does not sign the Fiscal Compact, it cannot receive assistance based on the ESM. Additionally, it defined the initiative that the limit for a structural deficit of 0.5% of the GDP had to be introduced in national legislation. (Bova, Kinda, Muthooru & Toscani, 2015) Most countries have done that (although some with a delay, like Belgium and Greece), while the others have imposed these provisions at the legislative level, not at the constitutional level, as was recommended.

The existing legislation has improved the monitoring of the EU Member States' budgetary policies, but the strengthening of the fiscal capacity and further steps in the convergence of the Eurozone's and EU countries' fiscal policies still remain important issues. There are new proposals for the development of the legislative framework (European Commission, 2018), led by the European Investment Stabilization Function (EISF). The EISF is defined as a part of the Financial Perspective 2021-2027, with the aim of establishing macroeconomic stabilization and a strong response to asymmetric shocks and preventing crisis spillover effects. Therefore, the new framework for the fiscal rules (Schaechter, 2012) is directed towards the stabilization function, as well as the greater convergence of the fiscal policies of the EU countries.

COLD-SHOWER VERSUS MULTIYEAR EPISODES IN THE EU BEFORE THE GLOBAL RECESSION

Taking into account the existing architecture of the fiscal rules in the EU and the theoretical framework for the channel which comes to the effects of fiscal consolidation, the empirical analyses of the fiscal consolidation episodes in the period before and after the global recession in the EU economies is presented.

Based on the length of fiscal consolidation, fiscal consolidation exists when the budget deficit is reduced from 1 to 2% of the GDP in a year (a cold shower). The explanation for this definition lies in the fact that changing the budget deficit on such a scale cannot be due to the common movement in the economy, but this extraordinary result is automatically connected with the fiscal policy measures. In particular, in the paper by A. Alesina and S. Ardanga (2009), the fiscal consolidation period of one year is considered to be that period in which the growth of the cyclically-adjusted primary budget balance is at least 1.5% of the GDP. Fiscal consolidation is considered to be *successful* if there has been a cumulative reduction in the public debt share in the GDP for an amount greater than 4.5% of the GDP three years after the introduction of fiscal consolidation. The effects of fiscal consolidation are considered as *expansionary* if average economic growth in the implementation period and two years after that period is greater than 75% of economic growth during all the episodes of the fiscal consolidation. The two criteria are interconnected, because the positive effects of fiscal consolidation on growth mean a greater likelihood that the effects of fiscal consolidation will be expanded and consequently successful. So, a cold shower implies relatively big changes in the fiscal area made in a short period of time, unlike multiyear changes, which are smaller, but made within a longer period of time. Therefore, fiscal consolidation episodes can be defined as long-term changes in the fiscal policy management measured by using the cyclically-adjusted budget balance. Specifically (Alesina & Ardanga, 2015), a multiyear episode of fiscal consolidation is defined as:

- a period of two years, in which the total improves the position of cyclically-adjusted primary deficits

by 2% of the GDP (and there is an improvement in both years in particular);

- a period of 3 years, in which the total improves the position of the cyclically-adjusted primary deficit by 3% of the GDP (and there is an improvement in all three years in particular).

When multiyear episodes are concerned, fiscal consolidation is considered as *successful* if the share of the public debt in the GDP is smaller in the period of two years after the fiscal consolidation episode in relation to its value in the last year of that episode. Fiscal consolidation is *expansionary* if the GDP growth during the fiscal adjustment period exceeds that of the period preceding that episode.

A cold shower is recorded in the largest number of the EU economies in the analyzed period before the global recession (1990-2007). A comparative overview of the fiscal consolidations is shown in Table 1, using the alternative methods:

- ex-post, based on the changes in the cyclically-adjusted primary deficit, processed in M. Larch and A. Turrini (2008) and in the paper by A. Alesina and S. Ardanga (2015), and
- narrative, the method applied in P. Devries, J. Guajardo, D. Leigh and A. Pescaroti (2011).

Both methods recognize a cold shower in certain years, except in the case of Bulgaria (which, therefore, is not shown in the table), while the relevant data for the entire period are not available for Greece. The dynamics of the implementation of the fiscal consolidation episodes and their success differ in the analyzed time period. In the first decade, i.e. from 1990 to 2000, as many as a hundred cold-shower episodes were implemented in the EU. Their success was higher in the period from 1995 to 2000 in comparison with the period from 1990 to 1995 as a consequence of the defined fiscal framework at the EU level and the convergence process within the EMU framework. The period after the global recession (2000-2007) was characterized by the fiscal consolidation fatigue that reflected in a reduced number of cold showers in the EU countries (36 episodes), whose success was questionable in the largest number of cases. This

Table 1 Cold-shower vs. multiyear episodes in the EU economies before the global recession

	Cold showers																	Multiyear episodes	
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	1990-2007
AT							+	+				+	+						96-97
BE	+			+	+	+	+	+	+	+	+	+					+		96-98
CY											+				+	+			
CZ															+				
DE		+	+	+	+	+	+	+	+	+	+			+	+	+	+	+	92-94 96-00 03-07
DK						+									+	+			03-05
EE											+			+					
ES	+		+	+	+	+	+	+											94-97
FR			+	+	+	+	+	+	+										94-01 04-06
FI	+	+			+	+	+	+	+	+	+								93-94 96-98
GB					+	+	+	+	+	+	+								
HU										+				+					
IT	+	+	+	+	+	+	+	+	+						+	+	+	+	95-97 06-07
IE							+	+	+						+				91-94 96-98
LV							+				+								03-05
LT									+	+									
LU				+				+											94-96
MT										+					+	+			00-02
NL		+	+	+			+	+	+	+	+				+	+			96-00 04-05
PL																+			
PT			+		+	+					+		+	+		+	+	+	94-95 02-03 06-07
RO									+	+	+								
SE				+	+	+	+	+	+						+	+			93-98 03-05
SI													+						
SK									+			+		+					
UK							+	+	+		+								94-00

+ Indicates the annual and multiyear fiscal consolidations established in the papers by Larch and Turrini, 2008; Alesina and Ardagna, 2010; Devries, Guajardo, Leigh and Pescaroti, 2011

Source: Authors

could be explained by a slowdown in the economic activity and the effects of the fiscal consolidation were under the impact of repetitious negative growth rates.

According to the analysis of all the years in which the fiscal consolidation was being conducted in the EU economies until the global recession, cold showers turned out to be more frequently implemented than fiscal consolidation multiyear episodes. In 70% of the cold showers, the GDP growth was recorded by over 1.5% of the GDP, while in the emerging EU economies, a total of 30% of the cold-shower episodes resulted in a growth exceeding 3% of the GDP (Larch & Turrini, 2008). Namely, in the pre-accession and accession periods, the new EU economies had significant and favorable results of the implemented fiscal consolidation measures.

In addition to the identification of the fiscal consolidation multiyear episodes, it is also of interest to determine their success in the context of reducing the cyclically-adjusted budget deficit (namely, the expansionary against contractionary effects of fiscal consolidation). Although there is a hypothesis in economic theory in terms of the expectation of contractionary effects in the event of a reduction

in public spending or an increase in taxes in the implementation of fiscal consolidation, A. Alesina and S. Ardagna (2015) demonstrated that fiscal consolidation was more frequently unsuccessful than with contractionary effects. So, the more frequent problem is the inability to minimize a cyclically-adjusted budget deficit than contractionary effects (Figure 1).

Figure 1 shows that only two multiyear episodes of the fiscal consolidation (in Germany (1996-2000) and in Portugal (2002-2003)) may be characterized as unsuccessful and contractionary. All the other identified episodes resulted in expansionary effects, thus empirically affirming the existence of non-Keynesian effects, confirming the research hypothesis. In addition, the results of the empirical analysis suggest that the fiscal consolidation measures based on a reduction in public spending are more often connected with expansionary effects, and with success in reducing the public debt and budget deficits, in comparison to a tax reduction. On the other hand, the most successful multiyear fiscal consolidation is that conducted in Sweden in the period from 1993 to 1998, when the fiscal consolidation was reduced by the cyclically-adjusted budget deficit by 14% than it was

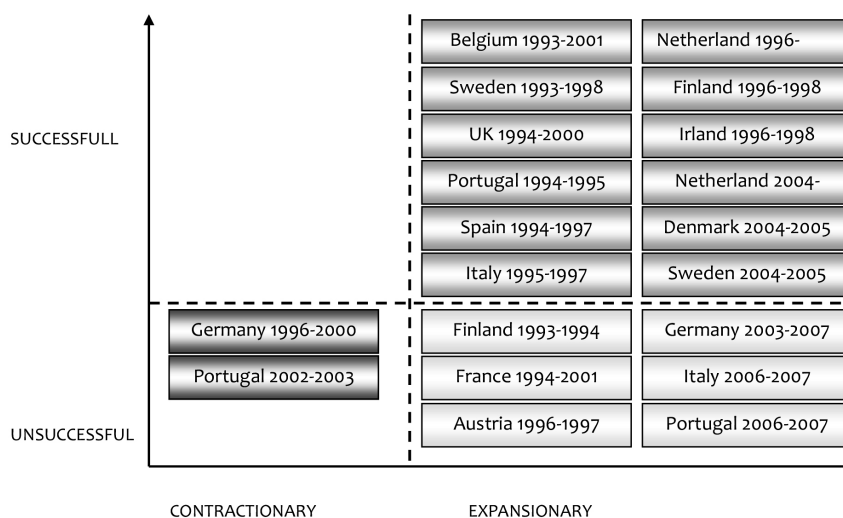


Figure 1 The (un)successful and expansionary/contractionary episodes of the fiscal consolidation

Source: Authors, according to Alesina and Ardagna, 2010

the case in the UK in the period from 1994 to 2000, with the reduction of 11%, and in the Netherlands for the period from 1996 to 2000, with a reduction in the cyclically- adjusted budget deficit by 8.8%.

FISCAL CONSOLIDATION AFTER THE GLOBAL RECESSION

After the global recession, the EU economies began to implement complex reforms in the fiscal policy field, including fiscal consolidations, the excessive deficit procedure (EDP) and the use of support programs. By entering the EDP procedure, the European Commission assumes the monitoring of public finance. Great Britain entered the EDP in 2008, whereas Spain, Greece, Ireland, France, Germany, Italy, Portugal, the Netherlands, Belgium and Austria entered it in 2009. However, the most endangered countries were the peripheral economics with already weak public finance, whose problems had intensified during the global recession (the share of the public debt in the GDP was 106% in Italy in 2008, whereas in Greece, that share reached 100%). The countries implemented support programs aimed at reducing budget deficits and the public debt, and also at strengthening the banking sector and ensuring economic growth. Finally, the idea was to regain investor confidence. Obtaining financial assistance is determined by the size of the fiscal crisis of the economy and potential dangers to the Eurozone, which implies that governments have to sign a Memorandum of Understanding (MoU) and the Fiscal Compact in order to ensure the consolidation of public finance. A total of five different recovery programs were defined to be implemented, depending on the Troika's decision.

The EFSM was financed by the European Commission's borrowing on international financial markets, where the EU's budget was a guarantee. Table 2 shows the implemented financial stabilization programs. In the period from 2011 to 2014, a total of 22.5 billion euros were provided to Ireland, and 24.3 billion euros to Portugal, while in 2015, a short-term loan of 7.16 billion euros was granted to Greece. From

the EFSF program in the period from 2011 to 2013, a total of 17.7 billion euros was distributed, with the repayment period from 2029 to 2042, whereas in the period from 2011 to 2014, a total of 26 billion euros was distributed to Portugal, with the repayment period from 2025 to 2040, while Greece received 141.8 billion euros from the EFSF in the period from 2012 to 2015 (the source of the data is the ESM). An overview of the implemented programs under the umbrella of the EFSF, EFSM and ESM is shown in the following table. In addition to these countries, indirect aid was also received by Italy, whose bonds were purchased by the European Central Bank in the amount of 102.8 billion euros. In a similar fashion, the ECB bought 14.2 billion euros in the case of Ireland, while 33.9 billion euros in the case of Greece, 44.3 billion euros in the case of Spain, and 22.8 billion euros in the case of Portugal. It turns out that emergency support programs contributed to the recovery of the economy and the prevention of the deterioration of a deep recession into a depression.

Table 2 shows the depth of the budget deficit before and after the implementation of the financial stabilization programs. However, the improvement is not only a consequence of significant financial assistance, but also the completed fiscal consolidation in the EU economies. The permanent episodes of fiscal consolidation were implemented in the majority of the EU economies and they were especially necessary in the fragile countries with the high budget deficits and public debt prior to the recession period - mostly the EU peripheral countries (Janković, 2019). However, the necessity for fiscal consolidation was manifested in the old EU members as well, so the first multiyear episode of the fiscal consolidation after the global recession lasted from 2010 to 2013, and the second lasted in the period from 2014 until 2015 (in Austria, Denmark, Germany, Ireland, Italy, Portugal, Spain, Great Britain). On the other hand, Finland, the Netherlands and Sweden were implementing the multiyear fiscal consolidation from 2010 to 2015. Therefore, the hypothesis that there are differences in the duration, structure and effects of the fiscal consolidations before and after the global recession is confirmed.

Table 2 The implemented financial stabilization programs

	Source of financing	Duration	Amount	Budget before	Budget after
Greece	EFSF, EFSM, ESM, MMF	2011-2019	256 billion euros	-15.1% of the GDP in 2009	1.1% of the GDP in 2018
Portugal	EFSF, EFSM, MMF	2011-2014	78 billion euros	-11.2% of the GDP in 2010	0.5% of the GDP in 2018
Ireland	EFSF, EFSM	2010-2013	85 billion euros	-32.1% of the GDP in 2010	0% of the GDP in 2018
Spain	ESM	2012-2013	41.3 billion euros	-11% of the GDP in 2009	-2.5% of the GDP in 2018
Cyprus	ESM, MMF	2012-2016	10 billion euros	-9% of the GDP in 2014	-4.8% of the GDP in 2018

Source: Authors

The effects of the implemented fiscal consolidation after the global recession reflected through a reduction in the value of the flow variable (the cyclically-adjusted budget deficit); however, the fiscal consolidations were less successful in the reduction in the stock variable (the accumulated level of the public debt). Namely, according to B. Pierluigi and D. Sondermann (2018), the macroeconomic imbalances in the flow variables in the first decade of EMU were adjusted to a significant extent, whereas the macroeconomic imbalances in stock variables were detained. Therefore, newer governance mechanisms, strengthening the fiscal framework by establishing stronger and more innovative fiscal rules, and their implementation into national legislation have become exceptionally important (Debrun, Moulin, Turrini, Ayuso-i-Casals & Kumar, 2008).

CONCLUSION

The global recession highlighted all the imperfections of the unfinished construction of the European Union. With the unique monetary policy, the heterogeneous fiscal policy did not prove to be able to absorb the asymmetric shocks generated in crisis conditions despite the flexibility of the national fiscal policies. Therefore, the effects of the fiscal consolidations in the 28 EU economies in the period before and after the recession (1990-2007 and 2010-2015, respectively) were compared, taking into account the length of the fiscal consolidation (cold-shower vs. multiyear episodes), and the effects of the applied fiscal consolidations (success/a lack of success in a reduction/increase in the cyclically-adjusted budget deficit and expansionary/contractionary effects in the context of an increase/decrease in the GDP).

The dynamics of the implementation of the fiscal consolidation episodes and their success differ in the analyzed period of time. The research hypothesis was confirmed by pointing out the fact that there are successful and expansionary effects of the cold showers and gradual episodes of the fiscal consolidation before and after the global recession. In the pre-crisis period, the number of the implemented one-year episodes (the so-called cold showers) was higher than in the post-crisis period, when the multiyear fiscal consolidations were mainly implemented. Overall, the success of the cold showers was recorded in 70% of the implemented fiscal consolidations, particularly in the emerging EU economies. In connection with the effects of the fiscal consolidation, the data suggest that only two multiyear episodes (those in Germany (1996-2000) and Portugal (2002-2003)) might be characterized as unsuccessful and with contractionary effects. All the other identified episodes resulted in expansionary effects, thus empirically confirming the existence of non-Keynesian effects. The implications of the empirical analysis that must be taken into consideration by policymakers are indicative of the fact that fiscal consolidations based on a reduction in public spending are more often connected with expansionary effects, and with success in reducing the public debt and budget deficits, in comparison with a reduction in taxes.

After the global recession, the EU economies began to implement complex reforms in the fiscal policy field, which did not only include fiscal consolidation in the economies with excessive budget deficits. Some countries entered the EDP procedure, and some were a part of the implemented support programs in the context of the European Stability mechanisms. The permanent episodes of the fiscal consolidation were conducted in the largest number of the EU economies starting in the year 2010 and the same proved to be necessary in the fragile countries with the high budget deficits and public debt before the recession. Thus, strengthening the fiscal framework and the complementarity between the supranational and national fiscal arrangements in the post-crisis period are of extraordinary importance.

The effects of the implemented fiscal consolidation after the global recession reflected through a reduction in the cyclically-adjusted primary budget deficit (the flow variable); however, the question still remains how much those measures were successful in reducing the accumulated public debt (the stock variable). Therefore, future research should be directed towards the panel data multi-cointegration analysis that would capture the connection between the flow and stock variables in the analysis of the fiscal consolidation effects in the EU economies.

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DETERMINANTS OF THE NONPERFORMING LOANS OF NIGERIAN DEPOSIT MONEY BANKS

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Credit risk is one of the biggest challenges banks in Nigeria are faced with. By implication, it is also the one with dire consequences for their operation and survival, given the fact that a series of banks' failures have significantly been brought into connection with nonperforming loans. Thus, this study examined the bank-specific and macroeconomic determinants of the nonperforming loans of the listed Deposit Money Banks (DMBs). Regression analysis involving fixed effect was adopted in order to analyze the panel data of the 10 selected deposit money banks in the period from 2008 to 2017. The findings show that the capital adequacy ratio, the size and the loans-to-total-assets ratio negatively and significantly affect nonperforming loans, whereas profitability and age were found to significantly but positively influence nonperforming loans of the Nigerian deposit money banks. More so, the liquidity ratio negatively, but insignificantly, affects nonperforming loans. However, not a single macroeconomic variable exerts a significant effect on nonperforming loans. The study recommends that banks should always deploy strategies for credit risk management by taking cognizance of the bank-specific and economic determinants of the nonperforming loans.

Keywords: bank-specific indicators, deposit money banks, macroeconomic indicators, fixed effect and nonperforming loans

JEL Classification: G01

INTRODUCTION

In the majority of the world's developing economies, like Nigeria, banks serve as the agent of economic transformation by pooling and channeling idle and unproductive surplus economic resources

into productive investment through financial intermediation. They do this by providing a formal arrangement which facilitates the movement of economic resources from the surplus end (i.e. savers) to the deficit end (i.e. investors), where they are needed for investment. In other words, the efficiency of the banking sector is a significant factor for increasing the volume of investment in an economy (Yüksel, Mukhtarov & Mammadov, 2016). According to G.

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Chabakauri and B. Y. Han (2016), financial markets are also important, essentially for the following two reasons: first, they create a channel for risk sharing; second, they provide a mechanism for the efficient allocation of assets among investors. Financial services provided by the financial market, which banks are an integral part of, are therefore seen as catalysts for economic growth and their subsequent development.

Credit creation by banks in developing economies like Nigeria remains their main income-generating activity. A bank's ability to create and legitimate a new loan, therefore, depends to a certain extent on the magnitude of the deposit liability they are able to pool from savers. Channeling this deposit to a loan imposes a risk on both the bank and the depositors. Of all the risks that banks are confronted with, credit risk is the most popular and has the most significant disastrous consequence on banks' operations and stability. This claim is further buttressed by M. Koju, R. Koju and S. Wang (2018), who opine that nonperforming is the major cause of banks' distress and financial vulnerability on the global financial market. The other risks that banks are exposed to include market risk, interest risk, exchange-rate risk and operational risk.

Credit risk refers to a risk arising from a failure of a borrower under the loan repayment obligation to fulfill the obligation of the payment of the principal amount of the loan and interest thereon as they fall due. The Basel Committee on Banking Supervision (2001) defines credit risk as the probability of losing an outstanding loan amount partially or wholesomely due to different credit events (default risk). This implies that the banks more exposed to credit risk have a higher tendency to distress and failure. It has been adjudged by McKinsey and Company that of all the risks banks are confronted with credit risk remains the most prominent, as it accounts for almost 60.0% of the entire risk exposure, whereas market and operational risks were found to account for 20.0% of such risk each, respectively. According to L. Agnello and R. M. Sousa (2011), concern for risk management in banks is sustained as a result of the

negative consequence that bank distress may have on the economy.

The need to prevent bank failure is now occupying the central attention of the major players and regulators on the financial market, oriented towards banks' risk management arising from the unfavorable consequence that nonperforming loans have had, as well as those they may have, on banks' operations and survival, most especially so in developing economies (such as Nigeria), where banks are vulnerable to the credit risk originating from the information asymmetry preventing banks from being able to assess the borrower's ability to fulfill their obligation to repay the loan and their inability to properly assess the viability of the project for which the customer is applying for a loan with the bank and its monitoring. There are also other factors, such as paucity on the part of the bank to institute and enforce an effective credit risk management system and fraudulent practices on the part of various loan officers and managers.

The volatile and turbulent macroeconomic conditions evident in Nigeria have also hindered customers' ability to repay a loan amount as their business profitability has greatly been hindered by the unfriendly economic conditions prevalent in the country. Therefore, effective and efficient credit risk management is becoming imperative for the banks that wish to reduce the efficacy of nonperforming loans in their turbulent and ever-volatile operating environment as this has a serious implication for their financial performance, stability and going concern. According to M. Psillaki, I. E. Tsolas and D. Margaritis (2010), efficient risk management practices will help to uphold the business viability and profitability of banks and also support the systemic stability and efficient allocation of capital in the economy.

The bank-specific, as well as macroeconomic, variables may affect their exposure to credit risk. Bank-specific variables are those factors that are considered as being special to banks and within their control axis. Those variables, which are considered in this study, include profitability, liquidity, capital adequacy, age, loans-to-total assets and the size. On the other hand, macroeconomic variables are those that affect the

aggregate economy and, by implication, all firms, regardless of the industry they may belong to, which they do not have control of. Those macroeconomic indicators which are considered in this study are the interest rate, the inflation rate and the gross domestic product growth rate, arising from the unfavorable consequence which nonperforming loans may have on banks' operations, as well as the need to effectively and efficiently manage risk. It is interesting to conduct an investigation into the different factors that may influence nonperforming loans in a bank-based economy like Nigeria.

The available literature has revealed that many researchers from both developed and developing economies have explored different areas of nonperforming loans. Only few studies, however, have been conducted on the bank-specific and macroeconomic determinants of nonperforming loans in Nigeria. The studies carried out by (Alshatti, 2015; Kajola, Adedeji, Olabisi & Babaolu, 2018; Okere, Isiaka & Ogunlowore, 2018) focused on nonperforming loans and profitability.

Therefore, this study was motivated by the paucity of empirics on the bank-specific and macroeconomic determinants of the nonperforming loans of the Nigerian listed deposit money banks. Based upon this, the study intends to reduce the knowledge gap to the barest minimum. The specific goals of the study include the examination of the effect of profitability on the nonperforming loans of the Nigerian deposit money banks, an analysis of the effect of liquidity on the nonperforming loans of the Nigerian deposit money banks, an analysis of the effect of capital adequacy on the nonperforming loans of the Nigerian deposit money banks, the investigation of the effect of age on the nonperforming loans of the Nigerian deposit money banks, the evaluation of the effect of the loans-to-total-assets ratio on the nonperforming loans of the Nigerian deposit money banks, an analysis of the effect of the size on the nonperforming loans of the Nigerian deposit money banks, the examination of the effect of economic growth on the nonperforming loans of the deposit money banks in Nigeria, an analysis of the effect of inflation on the nonperforming loans of the Nigerian deposit

money bank, and assessing the issue of the effect of the interest rate on the nonperforming loans of the Nigerian deposit money banks.

The conceptual, theoretical and empirical reviews form the basis of the second part of the paper. In Section Three, the methodology employed in the study is discussed, whereas the research findings are presented in Section Four. The findings of the study are discussed in Section Five. The conclusion and recommendations arising from the findings are given in Section Six.

LITERATURE REVIEW

In the study, a total of nine variables are used as a surrogate for the determinants of the nonperforming loans of the Nigerian deposit money banks. These are referred to as the independent variables, and the same are discussed below.

Conceptual review

'Nonperforming loans' is the only dependent variable for this study. It is a measure of a bank's credit risk, computed as the nonperforming-loans-to-total-loans ratio. Researchers as A. S. Messai and F. Jouini (2013) and S. O. Kajola *et al* (2018) used it to proxy credit risk in their studies.

Profitability is the ability of a business to earn net revenue in excess of its cost. A profit is very important in the business affairs of any profit-oriented outfit. Also, a business must make a profit in order for it to grow. Different profitability measures were used by the researchers in the prior literature in order to proxy profitability. The common barometers used in measuring it are Return on Asset, Return on Equity, Return on Capital Employed, the absolute value of Profit Before Tax and the absolute value of Profit After Tax. For the purpose of this study, ROA is used for the surrogate for profitability. This is premised on its ability to measure the efficiency of management with respect to the resources at their disposal. The relationship between profitability and nonperforming

loans can be viewed from the two perspectives: first, the banks that wish to be profitable may grant more loans, thus achieving a high credit default rate, on the one hand, and second, the banks that are profitable may grant more loans to their borrowers, on the other. The hypothesis presented in the study is stated as:

H1: Profitability has no significant effect on the nonperforming loans of the Nigerian listed DMBs.

Liquidity refers to a bank's ability to fulfil its short-term maturing obligations. Liquidity is a variable of interest to depositors and the bank's creditors as it shows the extent to which the bank is able to fulfill its obligation of paying out their deposits upon request. Conceptually, liquidity is expected to negatively affect nonperforming loans, due to a tradeoff between the amount of the liquidity kept by the bank and the amount of the loan they are able to advance to the borrowers. The study hypothesizes that:

H2: Liquidity management has no significant effect on the nonperforming loans of the Nigerian listed DMBs.

Capital adequacy refers to the ratio of a bank's primary capital to its total assets. The higher the capital, the better it is in terms of strength. The banks that are highly capitalized have a low tendency for nonperforming loans, whereas there is a reverse case when undercapitalized banks are in question. Low capitalization is an indicator of moral hazard. The following hypothesis is formulated:

H3: Capital adequacy has no significant effect on the nonperforming loans of the Nigerian listed DMBs.

In this study, age refers to the number of the years Nigerian banks have been listed on the stock exchange, meaning the year in which a bank began to operate in a sophisticated form. Bank age is expected to have a negative effect on nonperforming loans, given the fact that their experience arises from the number of the years they have been operating may help to prevent credit risk. Based upon this expectation, the hypothesis reads as follows:

H4: Age has no significant effect on the nonperforming loans of the Nigerian listed DMBs.

Loans-to-total-assets is expected to affect the degree of nonperforming loans. A bank with a high loans-to-total-assets ratio will have a high credit default rate. In this direction, the study hypothesizes as follows:

H5: Loans-to-total-assets has no significant effect on the nonperforming loans of the Nigerian listed DMBs.

In terms of the size, bigger banks are effective in controlling the problem of nonperforming loans, because they have advanced technologies and skilled manpower to tactfully handle moral hazard and agency problems (Salas & Saurina, 2002; Ranjan & Dhal, 2003). In addition, big banks collect ample relevant information related to borrowers, which enables them to take correct lending decisions. Contrarily, the motive to achieve a monopoly profit may prompt bigger banks to extend their operations to risky sectors, thus propelling a high rate of bad loans and causing market failures (Shleifer & Vishny, 2010; Ratnovski, 2012; Gennaioli, Shleifer & Vishny, 2013). The hypothesis reads as follows:

H6: The bank size has no significant effect on the nonperforming loans of the Nigerian listed DMBs.

Economic growth is mostly measured in terms of the gross domestic product. During the period of an increased gross domestic product, banks may issue more loans and advances to their customers. The relationship between economic growth and nonperforming loans is expected to be negative. During this period, borrowers are able to fulfill their obligations due to favorable economic conditions; banks are able to make credit conditions conducive for investment. The study hypothesized as follows:

H7: Economic growth has no significant effect on the nonperforming loans of the Nigerian listed DMBs.

During inflation, borrowers may demand more loans so as to finance their consumption of goods and services. This may push the banking sector to grant more loans and charge high interest on borrowed funds. Due to the economic hardship prevalent in the economy, borrowers may not be able to fulfill their contractual obligation of payment of interest and the principal due.

H8: Inflation has no significant effect on the nonperforming loans of the Nigerian listed DMBs

One of the contributing factors to nonperforming loan is the lending rate. The higher the rate charged by commercial banks on amount of loan they grant, the higher the rate of default and *vice versa*.

H9: Interest rate has no significant effect on nonperforming loan of The Nigerian listed DMBs.

THE THEORETICAL FRAMEWORK

Information asymmetry theory was proposed by G. A. Akerlof (1970) and J. E. Stiglitz and A. Weiss (1981). This theory argues that there is an information difference between the bank and the borrower approaching the bank for a loan as to the risk of the project that he/she wants to obtain the loan for in order to finance it. In this case, the borrower has more information than the bank and may prey on this to influence the bank to take a suboptimal course of action, which the bank would not be able to take if it had equal information about the project to finance as the borrower does. In this case, there is a likelihood for adverse selection and moral hazard (Matthews & Thompson, 2008). Therefore, the bank can bridge this information gap in the following manners: having a long-term relationship with the borrower before granting him/her a loan, information sharing and, ultimately, monitoring the project.

Agency theory states that there are two parties in a formal corporation, i.e. shareholders and managers. Shareholders are the owners of the company, while

managers are those statutorily employed for the day-to-day management of the business affairs of the corporation. Shareholders entrust the appointed managers with resources and the managers act on their behalf as agents. Managers are expected to act in the best interest of shareholders, such as by making decisions that will maximize shareholders' wealth. In practice, however, managers may pursue the strategies and courses of action that are in their (managers') own best interest as against that of the principals. In order to prevent this agency problem, managers are monitored from time to time. This monitoring further imposes an agency cost on the management, such as managers' emoluments and an audit fee. This theory is relevant to this study, as managers may attempt to increase the loan they grant to their borrowers without taking into consideration the needed modalities for granting loans, as managers are remunerated based upon their ability to earn more of an accounting profit, not a cash profit, which may, therefore, increase the efficacy of nonperforming loans in banks.

Financial intermediation theory was proposed by F. Allen and A. M. Santomero (1997). Financial institutions serve as a fund mobilization agent between the deficit economic unit and the surplus unit. The theory tries to emphasize the fund mobilization agency service by serving as an intermediary between fund lenders and fund borrowers. According to D. Diamond (1984), banks are able to effectively monitor borrowers, thus playing the delegated monitoring role. This delegated monitoring helps reduce market failure on the financial market.

RELATED EMPIRICAL STUDIES

S. I. Kasana and Q. M. Naveed (2016) focused on a total of 26 commercial banks in Pakistan from 2007 to 2013. Capital adequacy and loan loss provision growth were found to exert a significant and positive influence on credit risk, while the significant negative influence of the growth rate of the GDP, the advances growth rate and return on assets (ROA) was found to exist on credit risk. The study could not, however,

establish the significant influence of operating inefficiency, the loan-deposit ratio, the growth rate of the interest rate and the size on credit risk.

EL-M. J. Gambo, A-R. Ahmad and I. Muhammad (2017) focused on the examination of the determinants of the nonperforming loans of the Nigerian deposit money banks. A positive significant relationship was found to exist between nonperforming loans and the loans-to-deposits ratio and the bank size, whereas the capital adequacy ratio and inflation revealed a positive insignificant relationship and return on assets had a negative insignificant relationship with the nonperforming loan rate. The study conducted by V. Makri and K. Papadatos (2014) is in contrast with the findings of EL-M. J. Gambo *et al* (2017).

W. Waemustafa and S. Sukri (2015) examined the bank-specific and macroeconomic determinants of credit risk in Islamic and commercial banks in Malaysia. The study employed multivariate regression on the data obtained on a total of 13 Islamic and 15 conventional banks. The study established a significant influence of financing the risky sector, regulatory capital (REGCAP) and the Islamic Contract on credit risk in the Islamic banks, while simultaneously loan-loss provision, the debt-to-total-assets ratio, REGCAP, the size, earnings management and liquidity were found to exert a significant influence on the credit risk of commercial banks. The study could not find a significant influence of macroeconomic determinants, such as the GDP and the output gap, on credit risk; inflation and M3, however, were found to have a significant influence on the credit risk of both banks.

T. R. Mpofu and E. Nikolaidou (2018) examined credit risk determinants in Sub-Saharan Africa by using a dynamic panel model for the period from 2000 to 2016. The results showed that an increase in the real GDP growth rate had a statistically and economically significant reducing effect on the nonperforming loans-to-total-gross-loans ratio. Furthermore, the inflation rate, domestic credit to the private sector by banks as a percentage of the GDP, trade openness, the VIX as the global volatility proxy, and the 2008/2009

global financial crisis all had a positive and significant influence on NPLs.

L. Trenca and D. Bozga (2018) focused on the factors that determine banks' credit risks in Europe. The panel data for 70 commercial banks across 13 European countries from Q12005 to Q42011 were used. The result showed a positive effect of the capital adequacy ratio, the unemployment rate, the inflation rate, the government debt, the bank concentration on nonperforming loans, whereas the GDP growth was found to exert a negative influence on nonperforming loans.

J. Shkodra and H. Ismajli (2017) used the data of seven commercial banks in Kosovo* for the period from 2006 to 2015 and found a significant influence of profitability (ROE and ROA), inefficiency (IE), the loans-to-deposit ratio (LDR), credit growth (CG) and the deposit rate (DR). The study, however, could not find any significant effect of the solvency (SR) and credit rates (CR) on the credit risk of Kosovo* banks.

Based upon the examination of the nonperforming loan determinants in the Jordanian banking sector, K. S. Rajha (2017) found the existence of a significant positive influence of a period lag on the nonperforming-loans-to-total-assets ratio, while the size was found not to significantly influence nonperforming loans. Economic growth and inflation as macroeconomic determinants were found to exert a significant negative influence on nonperforming loans; in the same vein, the global financial crisis was found to significantly and positively influence nonperforming loans.

A. S. Messai and F. Jouini (2013) examined the micro- and macro-variables that are likely to influence nonperforming loans, and they did it on a sample of 85 banks in Italy, Greece and Spain for the data span a period of time from 2004 to 2008. The study found the negative influence of the GDP growth and banks' profitability, and the positive influence of the unemployment rate, a loan loss reserve to total loans and the real interest rate.

U. Murthy, N. M. Kamil, P. A. Mariadas and D. Devi (2017) conducted a study by using the primary data obtained from a questionnaire distributed to the respondents of the Selangor State of Malaysia. The findings of the study show evidence in support of the significant influence of the economic condition, consumers' income and bank interest, while no significant effect of the standard of living on nonperforming loans could be established.

In Nigeria, O. Akinlo and E. Mofoluwaso (2014) employed the Johansen Juselius Co-Integration and Error Correction Model to analyze the data obtained from the Central Bank of Nigeria's Statistical Bulletin for the period from 1981 to 2011 and found that economic growth negatively influenced nonperforming loans, whereas the unemployment rate, crediting the private sector and the exchange rate were found to positively affect nonperforming loans in the long run. A short-term analysis shows that credits to the private sector, the exchange rate, the lending rate and the stock market index are the key determinants of nonperforming loans.

A. Ikram, Q. Su, F. Ijaz and M. Fiaz (2016) conducted an investigation of the bank-specific and macroeconomic determinants of nonperforming loans in Pakistan. The goal of the study was achieved via the delivery of a questionnaire to credit analysts' bankers of the 42 branches of nine commercial banks. Data analysis was performed by a selective descriptive analysis and the Pearson chi-square. The study found that NPLs are significantly influenced by a credit policy (the nature of the contract), the age of the bank branch and the term of the loan, while SMEs' repayment capacity, the nature and the valuation of collateral do not significantly relate to NPLs. V. Swamy (2012) found a significant positive effect of profitability on the nonperforming loans of banks. V. Makri and K. Papadatos (2014) found a significant negative effect of the capital adequacy ratio on the credit risk of Greek banks.

F. O. Awuor (2015) found a significant positive effect of profitability on the nonperforming loans of banks, which was corroborated by V. Swamy (2012).

THE RESEARCH METHODS AND PROCEDURE

The study adopted *ex post facto* research, which is characterized by the quantitative attribute of data. The *ex post facto* research design is the design used when data related to a past event are used in a study. The population of the study consists of all the 15 quoted deposit money banks. The chosen sample size is 10, which represents 67% of the population of the study, thus satisfying the sampling criteria. The size of the banks was considered when choosing the sample. The banks include GT Bank Plc, UBA Plc, Access Bank Plc, Zenith Bank Plc, First Bank Plc, Sterling Bank Plc, Diamond Bank Plc, Fidelity Bank Plc, Wema Bank Plc and Unity Bank Plc. The data for the study were obtained from a secondary source by extracting relevant ratios from the annual reports and accounts of the 10 sampled banks for the considered periods from 2008 to 2017.

Model specification

Generally, the model is specified as follows:

$$Y = f(X)$$

where:

Y = the nonperforming loans (the dependent variable), and

X = the determinants (the independent variable).

Therefore, the model is specified as follows:

$$NPLR = F(ROA, LIQ, CAR, AGE, LOTA, SZ, GGDP, INF, INT) \quad (1)$$

The model is re-presented in the model 2 in econometrics terms:

$$NPLR_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 LIQR_{it} + \beta_3 CAR_{it} + \beta_{4it} AGE_{it} + \beta_5 LOTA_{it} + \beta_6 SZ_{it} + \beta_7 GGDP_{it} + \beta_8 INF_{it} + \beta_9 INT_{it} + e_{it} \quad (2)$$

where:

$NPLR_{it}$ = the nonperforming loans of the bank i in the period t , ROA_{it} = the return on asset of the bank i in the period t , $LIQR_{it}$ = the liquidity ratio i in the period

t , CAR_{it} = the capital adequacy ratio of the bank i in the period t , AGE_{it} = the age of the bank i in the period t , $LOTA_{it}$ = the loans-to-total-assets ratio of the bank i in the period t , SZ_{it} = the size of the bank i in the period t , $GGDP_t$ = the growth of the gross domestic product in the period t , INF_t = the inflation rate in the period t , and INT_t = the interest rate in the period t ;

β_0 = Constant;

$\beta_1 - \beta_9$ = the coefficient of the independent variable;

e_{it} = the error term.

The description and measurement of the variables

Table 1 below presents the description of the variables of the study.

Table 1 The measurement of the variables

Variable	Acronym	Measure	Expected effect
Dependent variables			
Nonperforming loans	NPLR	Nonperforming loans/total loans	
Independent variables			
Profitability	ROA	Profit after tax/total assets	+
Liquidity	LIQR	Cash + treasury bills/total deposits	-
Capital adequacy	CAR	Equity capital/total assets	-
Age	AGE	Natural log of the listing years	-
Loan to total assets	LOTA	Total loans/total assets	+
Size	LASSET	Natural logarithm of total assets	+
Economic growth	GDPG	$\frac{GDP_t - GDP_{t-1}}{GDP_{t-1}}$	-
Inflation rate	INFR	Percentage of the inflation rate	+
Interest rate	INTE	Percentage of the interest rate	+

Source: Authors

RESEARCH FINDINGS

The result of the descriptive statistics of the variables used in the study is shown in Table 2. Table 2 shows that ROA has a mean value of 0.010 and varies from the minimum value of -0.105 and the maximum value of 0.120. LIQ has a mean value of 0.211, with the minimum of 0.012 and the maximum of 0.622. CAR has a mean value of 0.143, ranging from -0.105 to 0.804. The average age of the sampled banks is 18.160, and ranges from the minimum of 0.000 to the maximum of 47. The NPLR is averaged 0.099, and ranges from 0.023 to 0.970. LOTA has a mean value of 0.516, with the minimum of 0.032 and the maximum of 4.538. LASSET has a mean value of 20.74, and ranges from 17.876 to 22.416. INTE has a mean value of 0.165, the minimum being 0.140 and the maximum being 0.184. INFR is averaged 0.119, the minimum being 0.080 and the maximum being 0.184. Finally, the GDPG is averaged 0.133, with the minimum value of -0.053 and the maximum value of 0.830.

Correlation

The correlation matrix presented in Table 3 below reveals that liquidity, capital adequacy, age, loans to total assets, the size, the interest rate, the inflation rate and the gross domestic product growth rate are all positively correlated with profitability, whereas only nonperforming loans have a negative correlation with it. No coefficient of the variables exceeds the value of 0.8, either, which is implicative of the fact that there is no co-linearity problem.

Regression

Following the prior empirical investigations conducted by V. Swamy (2012); A. S. Messai and F. Jouini (2013); V. Makri and K. Papadatos (2014), this study estimated multiple regression analysis by using the Fixed Effect Least Squares (FELS) and Random Effects Generalized Least Squares (REGLS) techniques. The results are presented in Table 4 below. The result of the Hausman test shows that the fixed effect is appropriate. Profitability was found to

Table 2 The summary of the descriptive statistics

	NPLR	ROA	LIQ	CAR	AGE	LOTA	LASSET	INTE	INFR	GDPG
Mean	0.099	0.010	0.211	0.143	18.160	0.516	20.74	0.165	0.119	0.133
Median	0.050	0.014	0.191	0.144	15.00	0.495	20.74	0.165	0.119	0.133
Maximum	0.970	0.120	0.622	0.804	47.00	4.538	22.416	0.184	0.165	0.830
Minimum	0.023	-0.105	0.012	-0.402	0.000	0.032	17.876	0.140	0.080	-0.053
Std. Dev	1777.069	194.995	9.024	1661.506	11.857	24790.3	4.407	6.021	5.558	198.97
Observations	100	100	100	100	100	100	100	100	100	100

Source: Authors

Table 3 The correlation matrix

	ROA	LIQ	CAR	AGE	NPLR	LOTA	LASSET	INTE	INFR	GDPG
ROA	1.000000									
LIQ	0.253706	1.000000								
CAR	0.660986	0.12330	1.000000							
AGE	0.104402	0.1302	-0.119	1.000000						
NPLR	-0.132321	-0.370	-0.223	-0.122	1.000000					
LOTA	0.416220	-0.070	0.630	0.054	-0.085	1.000000				
LASSET	0.253267	0.645	0.077	0.390	-0.319	-0.241	1.000000			
INTE	0.064340	-0.100	0.071	-0.024	0.196	0.045	-0.145	1.000000		
INFR	0.035883	-0.104	0.0497	-0.025	0.202	0.048	-0.004	-0.262	1.000000	
GDPG	0.013209	0.094	0.001	0.051	-0.055	-0.025	0.144	-0.680	0.488	1.000000

Source: Authors

have a positive significant effect on nonperforming loans. The liquidity ratio exerts no significant negative effect on nonperforming loans. Capital adequacy shows a negative, but significant effect on nonperforming loans. Age was found to have a significant positive effect on the nonperforming loans of the deposit money banks in Nigeria. The finding related to the effect of the loans-to-total-assets ratio on nonperforming loans demonstrates the existence of a significant negative effect of the loans-to-total-

assets ratio on nonperforming loans. The size was found to exert a significant negative effect on the nonperforming loans of the Nigerian deposit money banks.

As to the macroeconomics variables, the interest rate (INT) and the inflation rate individually exert no significant positive effect on nonperforming loans. Also, the GDPG exerts a positive, but insignificant influence on nonperforming loans.

Table 4 Regression Analysis for the determinants of nonperforming loans

Regressors	Pooled OLS Estimation			Fixed Effect			Random Effect		
	Coeff.	t-stat.	p-val.	Coeff.	t-stat.	p-val.	Coeff.	t-stat.	p-val.
Constant	-0.167	-0.185	0.854	5.687	3.196	0.002	-0.107	-0.207	0.838
ROA	0.919	1.243	0.221	2.474	3.117	0.003	0.919	1.371	0.174
LIQ	-0.269	0.142	0.061	-0.282	-1.741	0.086	-0.269	-2.115	0.037
CAR	-0.434	0.209	0.041	-0.734	-3.434	0.001	-0.434	-2.307	0.024
AGE	-0.001	0.001	0.418	0.048	3.364	0.001	-0.001	-0.905	0.368
LOTA	-0.003	-0.056	0.956	-0.134	-2.264	0.027	-0.003	-0.062	0.951
SIZE	-0.018	-0.763	0.448	-0.323	-3.568	0.001	-0.018	-0.847	0.399
INTE	3.436	2.055	0.043	2.367	1.502	0.137	3.436	2.283	0.025
INFR	1.226	2.107	0.038	0.853	1.576	0.119	1.226	2.341	0.022
GDPG	0.0350	0.385	0.701	-0.041	-0.479	0.633	0.035	0.427	0.670
R-square			0.283			0.481			0.283
Adj.R-square			0.207			0.358			0.207
F-stat			3.732			3.194			3.732
Prob F-stat			0.0			0.000			0.000
Durbin Watson			1.735			2.228			1.735
Hausman Test	28.97	9	0.0007						

Source: Authors

The value of the F-statistics is 3.194, which is significant at a 5% significance level. This indicates the fact that all the identified determinants (i.e. the bank-specific and macroeconomic determinants) have a joint significant influence on nonperforming loans. Therefore, the hypothesis that the bank-specific and macroeconomic variables do not have a significant joint effect on the nonperforming loans of the Nigerian listed deposit money banks is rejected.

THE DISCUSSION OF THE FINDINGS

Based upon the result obtained the Fixed Effect Ordinary Least Square, profitability was found to have a positive significant effect on nonperforming loans. It may be argued that, in an attempt to attract a bigger profit, Nigerian banks often grant excessive loans, a substantial part of which may not perform. As

profitability is reported on an accrual basis, it may be increasing even if the loan granted along with interest is yet to be paid. The outcome of this finding is in tandem with that obtained by V. Swamy (2012) and E. O. Awuor (2015), who found a significant positive effect of profitability on banks' nonperforming loans. Arising from this finding, the hypothesis H1, implying no significant positive effect of profitability on nonperforming loans, is therefore rejected.

The liquidity ratio was found to have no significant negative effect on nonperforming loans. This outcome is in conformity with the *a priori* expectation of the study. The negative effect can be justified on the ground of the fact that banks' preference for remaining liquid will negatively affect the amount they are willing to invest in loans, and, the lower the loan granted, the lower the level of nonperforming loans. This finding is in line with that obtained by W. Waemustafa and S. Sukri (2015). Arising from the said,

the hypothesis H2, implying no significant negative effect of liquidity management on the nonperforming loans of the Nigerian listed deposit money banks, is therefore accepted.

Capital adequacy shows both negative and significant effects on nonperforming loans. This finding is in line with the a priori expectation of the study. It is also in line with the finding of V. Makri and K. Papadatos (2014). The hypothesis H3, implying no significant negative effect of the capital adequacy ratio on the nonperforming loans of the Nigerian listed deposit money banks, is therefore rejected.

Age was found to have a significant positive effect on the nonperforming loans of the deposit money banks in Nigeria. The logical conclusion that can be drawn from this finding is that, as banks increase in age, their loans also increase in the same order, which may suggest high nonperforming loans. Therefore, the hypothesis H4, implying no significant positive effect of age on the nonperforming loans of the Nigerian listed deposit money banks, is rejected.

The finding pertaining to the effect of the loans-to-total-assets ratio on nonperforming loans shows the existence of a significant negative effect of the loans-to-total-assets ratio on nonperforming loans. This finding implies that the deposit money banks in Nigeria have a low loans-to-total-assets ratio, which affords them the opportunity to absorb credit risk. The finding is in contrast with that of K. S. Rajha (2017), who found a significant positive effect of the loans-to-total-assets ratio on nonperforming loans. Therefore, the hypothesis H5, implying no significant negative effect of the loans-to-total-assets ratio on the nonperforming loans of the Nigerian listed deposit money banks, is rejected.

The size was found to have a significant negative effect on the nonperforming loans of the deposit money banks in Nigeria. This finding is in consonance with the assertion by (Salas & Saurina, 2002; Ranjan & Dhal, 2003) that big banks have access to sophisticated technology and the needed manpower and skills to obtain necessary and sufficient information about moral hazards. This finding corroborates the result of prior studies, such as those by N. T. Duong and T. T.

Huong (2016), which found a significant negative effect of the size on nonperforming loans. Arising from this fact, the hypothesis H6, implying no significant negative effect of the size on nonperforming loans, is therefore rejected.

As far as the macroeconomic variables are concerned, the interest rate and the inflation rate individually have no significant positive effect on nonperforming loans. Also, the growth rate exerts a positive, but insignificant influence on nonperforming loans. The finding pertaining to the effect of the interest rate on nonperforming loans is in contrast with that of P. D. Louziz, A. T. Vouldis; V. L. Metaxas (2010); I. Saba, R. Kouser and M. Azeem (2012). Due to this finding, the hypothesis H7, implying no significant positive effect of the interest rate on nonperforming loans, is accepted, while the result for the influence of the inflation rate on nonperforming loans further contradicts the finding of C. F. Djiogap and A. Ngomsi (2012). The hypothesis H8, implying no significant positive effect of the inflation rate on nonperforming loans is therefore accepted. The finding as to the negative, but insignificant effect of the growth rate on nonperforming loans is in line with that of I. Saba, R. Kauser and M. Azeem (2012); B. Skarica (2013). Therefore, the hypothesis H9, implying no significant negative effect of the gross domestic product growth rate on the nonperforming loans of the Nigerian listed deposit money banks, is accepted.

CONCLUSION

The main thrust of this study was the empirical investigation of different bank-specific and macroeconomic determinants of the nonperforming loans of a total of 10 listed deposit money banks in Nigeria for the period from 2008 to 2017. The main finding of this study is that 35.8% of variations in the nonperforming loans is accounted for by bank-specific and macroeconomic indicators. This finding implies that other factors outside the bank and economic indicators outside the scope of this study may account for the remaining 64.2% of variations. Those factors may include the quality of management, the

credit risk management control system, borrowers' characteristics and political factors. The study is only limited to the listed deposit money banks in Nigeria, while the non-deposit money banks were not considered. This is the major limitation of the study. Thus, the study contributes to the finance literature due to the investigation performed in it of how bank-specific and macroeconomic indicators influence the nonperforming loans of the Nigerian deposit money banks. The study established a significant joint effect of both bank-specific and macroeconomic determinants on nonperforming loans. The findings, however, indicated the fact that the bank-specific variables (such as profitability, capital adequacy, age, the loans-to-total-assets ratio and the size) are the major factors that influence nonperforming loans in the Nigerian deposit money banks.

Based upon these findings, the study suggests and recommends that banks' finance managers and top management should take cognizance of profitability, capital, age, the loans-to-total-assets ratio and the size in making attempts to reduce nonperformance loans. Also, they should take into account the prevailing economic conditions while making decisions involving loan administration. The government should make and implement the economic policies that will improve the banks' ability to reduce the efficacy of nonperforming loans through a proper control of the inflation and interest rates.

The study clearly shows the importance of the bank-specific variables for the nonperforming loans of the Nigerian listed deposit money banks. This outcome encourages banks to properly manage their credit risk by taking into consideration liquidity, capital adequacy, the loans-to-total-assets ratio and the size in their attempts to reduce nonperforming loans.

The study is limited to the sample of a total of 10 banks for the period from 2008 to 2017. Future research efforts should increase the timeframe of the study by taking into consideration a larger number of years, as well as the other factors that may have an influence on nonperforming loans, most especially so from the borrower's perspective. Future research efforts should also be directed towards other, non-deposit money banks.

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AN ASSESSMENT OF THE INTERNAL DETERMINANTS OF THE ENVIRONMENTAL DISCLOSURE PRACTICES OF FIRMS ACROSS SUB-SAHARAN AFRICA

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This paper comparatively analyzes the internal determinants of environmental disclosure practices among firms in Sub-Saharan Africa (SSA). To achieve this, secondary data on the characteristics of the measures of the board and the characteristics of the audit committee were obtained from a sample of 60 companies from across the region (20 each from Kenya, Nigeria and South Africa). The regression technique was used to analyze the data and the results revealed the fact that, while the characteristics of the measures of the board and the audit committee were found to be the significant determinants of the environmental disclosure of firms in Kenya and Nigeria, the same cannot be said of firms in South Africa. The study, therefore, recommends that borrowing from South Africa, environmental management practices should be institutionalized in the entire region. Additionally, standard-setters should make practical efforts by developing new reporting standards which will guide and encourage a full disclosure of environmental concerns by firms.

Keywords: Sub-Saharan Africa, disclosure requirements, financial reporting, environmental management, corporate governance, board of directors

JEL Classification: G34, M40, M41

INTRODUCTION

Globally, organizations have been confronted with a variety of environmental and ecological concerns affecting their respective operations and activities at different magnitudes. Despite the existence of such environmental concerns, the natural environments within which firms operate have metamorphosed into

the avenues through which competitive advantage might be gained. While we agree with the arguments that firms may gain competitive advantage from their immediate environment, the fact that such firms, their host communities and the entire ecosystem have been faced with the degrees of environmental decadence ranging from very minute to a variety of severe environmental hazards cannot be overemphasized. This has spurred the studies that have continuously affirmed the need for improved environmental performance, environmental disclosure requirements

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and further calls for firms to be more environmentally friendly (Raath, Kanyimba, De Sousa & Richter, 2018; Qian, Hörisch & Schaltegger, 2018).

However, due to exigencies resulting from the performance of a growing number of environmental responsibilities among firms and across sectors, environmental performance has evolved in the accounting literature as the focal concept of discourse (Makori & Jagongo, 2013; Hoje, Kim & Park, 2014). So far, researchers have examined the determining factors of the pro-environmental behavior of firms and the assumed link between environmental reporting and the concepts such as corporate governance, firm performance and disclosure practices, among others (Cong & Freedman, 2011; Latridis, 2013; Mnasri, 2015; Jones, Jackson, Bates & Tudor, 2016; Adinehzadeh, Jaffar, Shukor, & Abdul Rahman, 2018; Mata, Fialho & Eugénio, 2018). Noteworthy, the outcomes of the accounting research studies conducted to date have suggested that the absence of disclosures on environmental costs and associated activities in firms' published annual reports have ultimately amounted to a rout to the very essence of financial reporting since the fundamental qualitative characteristics of the accounting information of "relevance" remains questionable (Uwugbe & Egbide, 2013; Makori & Jagongo, 2013). This is why E. Jeroh and E. G. Okoro (2016) reiterated the fact that environmental reporting had become the basic necessity at corporate levels.

This study primarily sets out to comparatively examine the internal determinants of environmental disclosure practices by obtaining empirical evidence from a cross-section of firms in Sub-Saharan Africa (SSA).

Bearing in mind the foregoing research subject, the research goal of the study is to ascertain whether the characteristics of the measures of the board and the audit committee have a significant influence on environmental disclosure practices among the listed firms in SSA. The study is empirically oriented and employs quantitative methods (descriptive and inferential statistics alongside diagnostic tests). The study's outcomes are useful to Corporate Boards, organizational personnel at managerial cadres,

regulatory bodies/agencies and generally the stakeholders of firms across the countries in SSA.

Beside the introductory and concluding sections, this paper also majorly consists of the other four sections: first, there is a problem statement, which is followed by the second, i.e. a literature review and the theoretical background of the study. The third section deals with the method applied in the study, while the fourth dwells upon the results.

PROBLEM STATEMENT

Most countries in SSA have migrated to or adopted the global reporting standards (International Financial Reporting Standards - IFRS) for the purpose of reporting and presenting financial statements. Interestingly, when reporting with the existing national and/or global accounting standards, environmental and related costs do not appear as separate line items in the income statements of firms (Aurelia-Aurora & Sorina-Geanina, 2012). Thus, firms sometimes disclose such related costs on a voluntary basis, especially so where legislations and regulatory pronouncements on such matters are minimal or absolutely absent. According to N. H. Sheila, H. M. Rashid, A. A. Mohammed and A. K. Meera (2012), the choice of reporting the relevant data that may be useful for stakeholders' information needs largely depends on a variety of the characteristics of the firm and the measures of corporate governance. Impliedly, these corporate governance measures may, therefore, be considered as the vital requirements for or determinants of corporate environmental and social disclosures among firms. This assumption is in line with the views expressed by authors such as R. M. Haniffa and T. E. Cooke (2005); M. A. Ali and R. H. Attan (2013).

Despite the growing body of the extant studies on environmental and social disclosure among firms (Delmas & Toffel, 2008; Cong & Freedman, 2011; Aurelia-Aurora & Sorina-Geanina, 2012; Cho & Patten, 2013; Lu & Abeysekera, 2014; Meng, Zeng, Shi, Qi & Zhang, 2014; Michelon, Pilonato & Ricceri,

2015; Md Nor, Bahari, Adnan, Kamal & Ali, 2016; Brooks & Oikonomou, 2018; Husted & de Sousa-Filho, 2018; Mata, Fialho & Eugénio, 2018), it may clearly be observed that this concept is yet to receive broad attention in the accounting literature within developing economies and, by extension, within the region of Sub-Saharan Africa (Delmas & Toffel, 2008). Additionally, the few studies on the concept of environmental accounting and/or disclosure of firms that have sprouted within the region are mainly focused on specific sectors, such as oil and gas, banking, cooperatives and manufacturing sectors, respectively (Uwuigbe, 2012; Jeroh & Okoro, 2016; Mathuva & Kiweu, 2016; Ashafoke & Ilaboya, 2017). More worrisome is the fact that these studies are country-specific, devoid of any form of the comparative analysis of firms across the region of SSA, thus making the policy implication of such studies restrictive in terms of coverage and application in other jurisdictions. This has, however, created an empirical gap which this current study sets out to fill.

Besides, given the need for continuous research studies aimed at examining the determinants of environmental disclosure practices, especially as regulatory requirements for an improvement in corporate reporting and the governance of firms, is currently experiencing a dramatic turnaround, this study striving to ascertain the level of environmental disclosures by firms across the sub-region through the examination of the level of the variability of environmental disclosure practices across different jurisdictions in SSA.

In light of the above, this study sets out to:

- comparatively examine whether the measures of the board structure (the board size, the board gender diversity and the board independence) and the measures of the audit committee (the size, diligence and independence of audit committees) are significant determinants of the environmental disclosure of the selected, listed firms across countries in SSA, and
- ascertain whether there is a significant variation in the environmental disclosure practices among the listed firms in SSA.

Given the foregoing, the following is hypothesized:

- H1: The characteristics of the measures of the board and the audit committee do not have a significant influence on the environmental disclosure practices among the listed firms in SSA.
- H2: There is no significant variation of the determinants of the environmental disclosure practices among the countries in SSA.

LITERATURE REVIEW AND THEORETICAL BACKGROUND

The Concept of Environmental Disclosure

Environmental disclosure is the act of identifying, measuring, allocating, and/or integrating costs related to greenhouse/carbon emission and other environmental concerns in the financial statements of firms. In a similar fashion, environmental disclosure refers to the conscious efforts targeted at the provision of useful information on environmental concerns. D. M. Makori and A. Jagongo (2013) believe that environmental disclosure implies reporting every piece of information on social costs which may have been incurred by firms as a result of production externalities on the environment. Environmental disclosure also reveals the level of the sustenance of regular intervention costs designed to bridge a gap between marginal and total costs reported in companies' financial statements.

Environmental disclosure remains a part and parcel of firms' social responsibility disclosures. The term Social Responsibility Disclosures (SRD) refers to the totality of all disclosures pertaining to increasing interactions between reporting entities and their respective physical/social environment (Deegan, Rankin & Voght, 2000). According to D. Campbell (2003), the term "environmental disclosures" refers to any disclosure pertaining to the effect of a company's operations on the immediate natural or operating environment. Impliedly, environmental disclosure

reports all information on environmental concerns, with details of their respective financial implications for the company's environmental management and other strategic decisions, actions and/or operations.

Depending on the user group, research evidence has shown that environmental reports are useful tools in satisfying stakeholders' decision-making needs (Kamala, Wingard & Cronjé, 2015; Liu, Yin, Pengue, Benetto, Huisinigh, Schnitzer, Wang & Casazza, 2018). The trends in environmental disclosure practices among firms have undoubtedly changed recently, having attracted researchers, policy-makers, management and practitioners in different jurisdictions (Buisse & Verbeke, 2003; Delmas & Toffel, 2008). In fact, environmental disclosure is mainly directed towards achieving good corporate governance aimed at guaranteeing transparency promotion in all facets/spheres of societal activities (Ashafoke & Ilaboya, 2017).

Theoretical Framework

Legitimacy Theory provides the theoretical base upon which this study hinges. According to A. N. Nwaobia (2015), the nub of this theory is derived from the tenets of the organizational legitimacy discourse that posits that there are social contracts between companies and the respective societies they operate in. Thus, legitimacy theory presents the multi-faceted expectations of societies and the manner how firms should conduct their multidimensional operations amidst societal demands. Arguably, societies will allow companies to continuously operate given certain synergistic factors. The management of firms will therefore adopt copious strategies designed to give the society the assurance that societal values and norms will at all times be complied with.

In assessing the internal determinants of environmental disclosure practices among firms, this paper draws from the existing arguments in the prior literature (Mousa & Hassan, 2015; Nwaobia, 2015; Zysnarska-Dworczak, 2018) and aver that, in disclosing environmental and related financial information, firms are guided by legitimacy

theory, which helps them better understand how to develop, implement and communicate their respective company policies on social responsibility and environmental concerns. It is on this note that companies strive for accountability in providing value-relevant information through full disclosure in financial reporting.

Since the theory provides insights useful for our understanding companies' practices regarding social environmental disclosure and the disclosure of related issues (Mousa & Hassan, 2015), this study hinges upon the tenets of legitimacy theory.

Prior Empirical Review of Environmental Disclosure Determinants

The growing awareness of and stakeholders' expectations regarding the responsibilities of firms pertaining to greenhouse emissions and other environmental concerns have given birth to renewed research interests in environmental accounting, environmental performance and the disclosure quality of firms within and outside the SSA region. Accordingly, the study by A. Ahmad (2012) sets out to investigate environmental accounting and the reporting practices of the sampled firms in Bangladesh. The study relied on the primary and secondary data obtained from the financial reports of the firms selected for the study. Analyses were carried out with the help of descriptive, diagnostic and inferential statistics, and the findings revealed, among other things, that the Bangladeshi companies had a strong desire for environmental disclosure although, with but very few exceptions, most information on environmental concerns was qualitative by its nature and was mainly found in directors' or chairmen's/managing directors' statements.

D. Aurelia-Aurora and M. S. Sorina-Geanina (2012) examined how environmental information were presented and disclosed by Romanian companies. The study, however, analyzed the notable factors presumed to have influenced the manner in which environmental accounting had been developing over years. Additionally, a content analysis was conducted

of the nature and type of the environmental information disclosed by the listed Romanian firms. The study found that a total of 80% of the financial statements of the sampled companies had disclosures on sustainable development studies although very few companies had reports on the fines and penalties resulting from environmental pollution. The study, however, pointed out the fact that such reports on penalties and fines might have negative connotations for reporting entities.

N. D. Mchavi, and C. C. Ngwakwe (2017) examined the effect environmental pressure would exert on the level of environmental disclosure among banks in South Africa. The study relied on a mixture of the qualitative and quantitative data covering the period from 2010 to 2015. A content analysis was conducted in order to obtain relevant data from the sustainability reports of only three sampled banks, whose records had consistent data for the given period and across all the variables. The panel data and multiple regression techniques were employed and the analysis was based on the results that emanated from descriptive and inferential statistics. Overall, the study observed that the measures of environmental pressure had no significant influence on the environmental disclosure of South African banks. Therefore, the study calls for further studies aimed at finding out the reason why the disclosure practices of the banks had no relationship with the environmental pressure present in the country.

D. M. Mathuva and J. M. Kiweu (2016) analyzed the link between Cooperative Social and Environmental Disclosure (CSED) and the levels of the financial performance of Kenyan Savings and Credit Cooperatives (SACCOs). However, the data were obtained from the financial reports of the 212 registered SACCOs over a six-year period spanning from 2008 to 2013, which resulted in a total of 1272 empirical observations. The analysis was based on the panel OLS approach. The empirical evidence revealed a relatively low level of environmental disclosure among the Kenyan SACCOs. Additionally, the relationship between CSED and the financial performance of SACCOs in Kenya was found to be negative. Thus, the study argued that the trend might

be a result of transition in the regulatory landscape of SACCOs in Kenya.

In a Nigerian study by S. J. Musa, T. Peter and M. Bukar (2015), efforts were made to examine the environmental accounting/disclosure practices of the listed firms in the consumer goods sector. The main thrust of the study was to ascertain the extent to which global accounting standards (IFRS) had influenced environmental disclosure practices among Nigerian firms. The study adopted content analysis and the data were extracted from the annual financial reports of the sampled consumer goods companies in the fiscal year 2013. The study found that the accounting standards were not the significant determinants of environmental accounting disclosure; hence, the adoption of the IFRS had no significant influence on disclosures regarding environmental accounting.

In a more recent study by L. S. Nguyen and M. D. Tran (2019), the link between the disclosure levels of firms' environmental concerns and their performance (proxied by ROA) was examined by obtaining the evidence from the listed companies in Vietnam. The quantitative data were compiled from the financial records of the sampled firms, covering a five-year period from 2013 to 2017. The analysis was based upon two regression models. The findings of the study suggested a close association between the firms' disclosure of environmental financial data and their performance.

METHODS

This research study adopts the ex-post facto design and relies on the secondary data of the selected, listed firms in the most active and most capitalized stock markets in the three regions of SSA - East Africa, West Africa and South Africa. These stock markets are the Nairobi Stock Exchange (NSE), Kenya (East Africa); the Nigerian Stock Exchange (NGSE), Nigeria (West Africa), and the Johannesburg Stock Exchange (JSE), South Africa. As at 31st December 2017, all the three stock exchanges had a summation of 619 listed firms (Table 1).

Table 1 The study population

S/N	Name of country	Number of listed firms
1	South Africa	386
2	Nigeria	170
3	Kenya	63
	Total	619

Source: The Stock Exchanges of the respective countries, (2018)

However, as many as 20 firms were randomly selected for each country from within the companies whose stocks were actively being traded throughout the study period. This produced a total sample of 60 firms (20 firms from each country). The secondary data on the variables of interest were, therefore, obtained from the financial statements of the sampled firms for a six-year period, spanning from 2012 to 2017.

For the purpose of the analysis, the panel technique was adopted, based on the following model:

$$Y_{it} = \beta_0 + \beta_1 K1_{it} + \beta_2 K2_{it} + \beta_3 K3_{it} + \beta_4 K4_{it} + \dots \epsilon_t \quad (1)$$

Where:

Y_{it} = the dependent variable

$K1_{it} \dots K4_{it}$ = the explanatory variables

$\beta_0 \dots \beta_4$ = the Beta coefficients

ϵ_t = the error term

Based on the foregoing basic OLS model, specific models were derived to test the postulated hypothesis, thus:

$$ENVD_{it} = \beta_0 + \beta_1 BODSZ_{it} + \beta_2 BODGDV_{it} + \beta_3 BODIND_{it} + \beta_4 AUDSZ_{it} + \beta_5 AUDGDV_{it} + \beta_6 AUDIND_{it} + \beta_7 CSIZ_{it} + U_t \quad (2)$$

The variables in (2) above are, however, defined and described in Table 2.

Table 2 The definition and description of the variables

Variables	Variable Type	Label	Proxy/Measure
Environmental Disclosure	Dependent Variable	ENVD	The dummy variable of 1 for each year environmental disclosure is made, otherwise 0.
Board Size	Independent Variable	BODSZ	The number of the members of the company's Board of Directors in the given year.
Board Gender Diversity	Independent Variable	BODGDV	The proportion of female Board members against the total Board members in the given year.
Board Independence	Independent Variable	BODIND	The proportion of the external, independent directors against the total Board size.
Audit Committee Size	Independent Variable	AUDSZ	The total number of members in the committee.
Audit Committee Diligence	Independent Variable	AUDDIL	The number of the meetings held and attended during the financial year.
Audit Committee Independence	Independent Variable	AUDIND	The proportion of the external, independent directors in the audit committee against the total committee size.
Company Size	Control Variable	CSIZ	The natural log of each company's total assets in a year.

Source: Author

RESULTS

Prior to the presentation of the results of the inferential statistics, the results of the descriptive statistics and the diagnostic tests were presented and analyzed. The indications from Table 3 show that the average value of the dependent variable (ENVD) is 0.6917, with a very low standard deviation of about 0.4624. The low standard deviation indicates a low level of the dispersion of the respective firm-level data from the mean. Again, it is possible to notice that the variables of the board characteristics (BODSIZ, BODGDV and BODIND) showed the related dispersion level. When the audit committee characteristics are concerned, it is clear that, apart from AUDIND, the level of the dispersion of the data set from the mean showed a very low trend. The minimum and maximum values of the respective variables are also presented in the table. The results of descriptive statistics are usually used to show the nature of the data generated for any given study.

The result of the correlation analysis is also presented so as to show the direction of the relationship among the variables and confirm whether there are possible

signals of the presence of multicollinearity among the data set. The result of the correlation analysis is presented in Table 4.

Table 3 The summary of the descriptive statistics for all the panel data

Variable	Mean	Std. Dev.	Min. Value	Max. Value	N
ENVD	0.6917	0.4624	0	1	360
BODSIZ	11.6417	3.5509	4	25	360
BODGDV	16.0443	10.7138	0	50	360
BODIND	70.8331	13.5373	25	94.44	360
AUDSZ	5.075	1.4881	2	11	360
AUDDIL	4.3778	1.3524	2	12	360
AUDIND	78.7058	25.6969	20	100	360
CSIZ	14.1089	1.7354	10.19	18.33	360

Table 4 The correlation matrix for all the panel data

	ENVD	BODSZ	BODGDV	BODIND	AUDSZ	AUDDIL	AUDIND	CSIZ
ENVD	1.0000							
BODSIZ	0.3481	1.0000						
BODGDV	0.2340	0.2007	1.0000					
BODIND	0.0861	0.0925	0.0133	1.0000				
AUDSZ	-0.0756	0.1548	-0.0016	-0.1673	1.0000			
AUDDIL	0.0487	0.0897	0.1450	0.1457	-0.1179	1.0000		
AUDIND	0.2641	0.0811	0.1414	0.4142	-0.6626	0.2624	1.0000	
CSIZ	0.3925	0.6448	0.2156	0.0307	0.1426	0.1847	0.0630	1.0000

Source: Author

Source: Author

The correlation results reveal that, apart from the Audit Committee Size (AUDSZ), all the explanatory variables demonstrated a positive association with the Environmental Disclosure (ENVD) of the sampled firms. Also, the correlation coefficient between the pairs of the explanatory variables ranged from 0.0016 (between BODGDV and AUDSZ) and 0.6626 (between AUDSZ and AUDIND). However, no pair of the explanatory variables indicated the signs of the presence of multicollinearity. This is because the correlation coefficients obtained were less than the threshold value of 0.8. The data were further subjected to the tests for multicollinearity and heteroscedasticity by using the Variance Inflation Factor (VIF) and the Breusch Pagan Cooke/Weisberg tests, respectively. Table 5 reveals the mean VIF of 1.64, with the VIF results for each independent variable ranging from 1.09, for BODGDV, to 2.40, for AUDIND. The result of the Breusch Pagan Cooke/Weisberg test further produced a chi2(1) value of 15.20 with a p-value of 0.0001. These results, however, confirm the fact that the model specified for this study is fit and meets the minimum condition for the OLS regression analysis.

COMPARATIVE OLS REGRESSION RESULTS ACROSS THE SAMPLED COUNTRIES

The summary of the OLS results for each country is presented in Table 6.

Table 6 The summary of the OLS regression results across the sampled countries

Statistics	Kenya	Nigeria	South Africa
F(7, 112)	2.84	6.37	1.51
Prob > F	0.0091	0.0000	0.1723
R-Squared	0.1509	0.2847	0.086
Adj.R-Squared	0.0979	0.2400	0.0289

Source: Author

In Table 6, a comparative summary of the OLS regression results for the sampled firms on a country-by-country basis is presented. The F statistics obtained for Kenya (Fcal = 2.84; p-value = 0.0091) and Nigeria (Fcal = 6.37; p-value = 0.0000) revealed that the characteristics of the board and the audit committee were in a significant relationship with environmental disclosure, but the same cannot be said for South Africa, where the F-value obtained was 1.51, with a p-value of 0.1723. A further analysis of the results in Table 6 shows that about 15.09% of environmental disclosure practices in Kenya were caused by the characteristics of the board and the audit committee, whereas about 28.47% of environmental disclosure practices in Nigeria could be attributable to the characteristics of the board and the audit committee. In South Africa, we observed that no relationship could have been established between environmental disclosure practices among the firms and the characteristics of their respective boards and audit committees. The above results imply that, for South

Table 5 The results for further diagnostic tests

Variable	AUDIND	AUDSZ	CSIZ	BODSIZ	BODIND	AUDDIL	BODGDV	Mean VIF
VIF	2.40	2.01	1.80	1.79	1.25	1.12	1.09	1.64
1/VIF	0.4169	0.4980	0.5566	0.5600	0.7989	0.8904	0.9166	
Breusch Pagan Cooke/Weisberg Test for Heteroscedasticity					chi2(1)=15.20; Prob>chi2(1)= 0.0001			

Source: Author

Africa, the environmental disclosure practices of firms cannot be significantly attributed to the internal factors/governance attributes of the respective firms. It is, therefore, possible that the choice of and compliance with environmental disclosure among South African firms are predetermined by the factors that are external to the firm, which are definitely beyond the scope of this current study. Noteworthy, this result is in consonance with the expectation in the literature, since the existing regulatory provisions require that South African firms should prepare and disclose their respective sustainability reports (Mchavi & Ngwakwe, 2017).

With respect to the results for Nigeria and Kenya, it can be noticed that the composition and nature of the boards of the listed firms and their respective audit committees directly or indirectly affect their practices towards environmental disclosures. It is therefore possible that the level of compliance with the regulatory pronouncements by the financial reporting councils (or other applicable regulatory bodies) pertaining to environmental concerns largely depends on the attributes of the boards and audit committees, which in turn affects the environmental disclosure practices of the companies in Kenya and Nigeria.

Given the foregoing results, it is obvious that, in the South African context, the practice of sustainability reporting has compelled firms to mandatorily disclose environmental information in their annual reports. The same cannot be said for Nigeria and Kenya. This development, however, has policy implications for financial reporting in the SSA region and, by extension, developing economies.

CONCLUSION

Globally, there have been increased concerns about the environmental hazards and environmental threats posed to the ecosystem due to various operations and business or due to the other activities conducted by companies generally. This is why the concept of environmental accounting and disclosure

practices has assumed the central place in topical discourse/debates among leading scholars. Despite this growing concern about environmental disclosure, empirical evidence has not established whether the determinants of environmental disclosure vary across countries in SSA, or not. However, this study sets out to comparatively ascertain the internal determinants of the environmental disclosure across the selected firms in SSA. The focus of the study was on the characteristics of the board and the audit committee as the possible determinants of environmental disclosure among firms.

Importantly, it was discovered that the internal determinants of environmental disclosure practices vary across countries in SSA. Specifically, while it can be noticed that the characteristics of the measures of the board and the audit committee were the significant determining factors of the environmental disclosure practices of the firms in Kenya and Nigeria, the same was not the case in South Africa. This result has policy implications for and calls for the need to examine the corporate governance and regulatory architecture of SSA countries SSA.

According to the results, the disclosure of environmental concerns among South African firms may not necessarily be significantly attributable to the internal factors, such as governance attributes. This means that the firms' compliance level regarding environmental disclosure in South Africa may possibly be predetermined by the external factors, such as regulatory provisions, which require that South African firms should prepare and disclose their respective sustainability reports. Given the aforesaid, the hypotheses stated in the study have been rejected since.

Based on the findings of the study, the following is recommended:

- According to the trend in South Africa, Environmental Management Practices (EMP) should be institutionalized through policies and guidelines among firms throughout the SSA region.
- Regulators in different countries in the SSA region should urgently design and implement the policies

that will make it mandatory for companies to prepare environmental and sustainability reports as a part of their disclosure requirements.

- The regional professional accounting bodies and financial accounting regulators are, therefore, invited to actively involve themselves in the process of institutionalizing EMP.

Standard-setters should make practical efforts by developing the new reporting standards that will guide and encourage the full disclosure of environmental concerns by firms.

However, this study is limited in scope, as it only covers the characteristics of the measures of the board and the attributes of the audit committee as the possible internal determinants of environmental disclosures among the firms. It is, therefore, suggested that future research studies should extend this scope by examining the link between environmental disclosure practices and firms' attributes, such as the capital structure, profitability measures and company policies, among other things. Given the fact that this study only focused on the internal determinants, research studies may also be conducted in order to ascertain all such external factors that, for the most part, drive environmental disclosure practices among firms.

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THE IMPACT OF KNOWLEDGE MANAGEMENT ON WAGE GROWTH IN THE CONSTRUCTION SECTOR: THE CASE OF MEDIUM-SIZED AND LARGE COMPANIES IN THE REPUBLIC OF SERBIA

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The study measures and analyzes the influence of knowledge management on average wages in Serbian construction companies. For the purpose of this research, of Knowledge Management (KM) dataset with 11 variables was created. The main goal of the research was to examine the influence of the dataset on the average wages in medium-sized and large construction companies. At the basic sample level, through factor analysis, a total of four factor scores were isolated, representing the strategies that the companies combine in KM. Using a regression analysis, it was found that the set of the four independent variables explained 84.5% of the average wage variability in the medium-sized and large construction companies. Two of the four strategies were statistically significant. According to the first strategy, the management insisted on a larger share of experts with the master's and bachelor degrees, while the second strategy was based on the introduction of the formal, legal protection and registration of innovative solutions, as well as a larger number of employees with a PhD degree.

Keywords: knowledge management, construction sector, factor analysis, multiple regression, wages, mid-size and large companies

JEL Classification: M21, M150

INTRODUCTION

Information and knowledge are important resources and drivers in the era of the 4.0 Industrial Revolution (Xu, David & Kim, 2018). Therefore, there is a growing

interest in the knowledge management discipline. It is a discipline focused on the management and allocation of knowledge and information, with the aim of increasing the efficiency and value of a company. The aim of the paper is to prove the impact of Knowledge Management (KM) on the business variables of Serbian mid-sized and large construction companies. From the group of business

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variables, the earnings of employees were extracted. For the majority of employees, wages are the most important source of income for paying a rent, food and bills, and for paying off loans. Higher-wage employees can afford a more expensive lifestyle (Hartman, 2017). Higher wages are not only a form of rewards, but also a way to earn loyalty. Increasing wages raises employee's morale and productivity. In addition, employees' consumer power grows. Higher employee consumption stimulates production, retail and the service sector. Higher employees' wages have a positive impact on job creation and government revenue through taxes, providing more funding for new projects and services. The construction sector was selected due to its specificity, dynamism and connection with other industries. In economic sciences, the construction sector is considered to have a significant impact on the economic development of one country (Dang & Sui Pheng, 2015).

This paper starts from the basic hypothesis:

H: KM positively affects the average wage growth in medium-sized and large construction companies in the Republic of Serbia.

As a measuring instrument, a KM dataset containing 11 variables classified into five thematic units: academic education, employee training, storage, dissemination and technical support was created. An online closed-ended-response questionnaire with the interval and Likert scales was used to collect the data from the managers of a total of 130 companies. For the purposes of this study, the average wages of the companies' employees were measured. Creating a tool for measuring the level of the wages in companies was a two-stage process. In the pilot survey, the respondents were first asked to directly answer the question: What is the average wage in your company? As no answer was received due to the fact that the question about the wages was direct and of a delicate and sensitive nature, the respondents were offered an interval scale to determine their wages, which did not produce results, either. Therefore, in the second stage, a special wage scale with three numerical degrees was created so as to indirectly obtain the data on the average wage in the Republic. The respondents

were asked: Is the average wage in your company lower than, equal to or higher than the national average for the Republic of Serbia (RS)? The data for the average wages in RS for the year 2017 were taken from the *Službeni glasnik* (7/2018). The impact of KM on employees' wages was measured by using appropriate statistical and econometric techniques.

The chapter entitled *The Construction Sector as an Impetus for Economic Growth* discusses the specificities of the construction sector and analyzes its impact on the economic development of mature and developing economies. The chapter entitled *The Application of Knowledge Management in the Construction Sector* defines the concept of KM and highlights its functions in economic sciences and management. Besides, the application of KM in the construction sector is analyzed by using various case studies. In the chapter entitled *Empirical Research* some of the results obtained from the empirical research on the impact of KM on employees' wages in Serbian companies will be presented.

THE CONSTRUCTION SECTOR AS AN IMPETUS FOR ECONOMIC GROWTH

Due to its dynamism and connection with other industries, the construction sector has a significant impact on the economic development of one country. The development of and an increase in turnover in the construction sector trigger a flywheel, which may lead to a range of economic benefits. In the first place, there is an increase in employment (Mallick & Mahalik, 2010; Stanišić, 2017) due to the induced impact on other business sectors. The development of the construction sector leads to an increase in demand for goods and services necessary for the construction of buildings, bridges, road and railway infrastructures, etc. This has a positive impact on the development of the mechanical and manufacturing industries, trade, services, transport and the financial sector, as construction projects may take a long time and require a continuous inflow of significant funds.

In a study L. Ruddock and J. Lopes (2006) confirmed the positive impact of gross value added as an indicator of the activity in the construction sector on the GDP *per capita* growth in developed and developing countries. Using the Granger causality test and time series regression analysis for the period from 1950 to 2005, a fact was pointed out that there was a connection between the construction sector and the real GDP growth rate in Pakistan (Khan, 2008). Based on the results, a higher flow in the construction sector precedes the GDP growth, while causality in the opposite direction was not found. Pakistan's aggregate economy was found to be heavily influenced by the construction sector. Based on an input-output analysis, A. Wibowo, F. X. Sugiyanto, M. Firmansyah and O. Amoudi (2008) demonstrated the importance of the construction industry for Indonesia's economy. According to the authors, the construction industry significantly contributes to local and national economies, as it has the capacity to generate unskilled, semi-skilled and skilled labor. The construction industry requires the input mobilization from other industries, as well as from production factors, which may lead to a significant increase in the employment rate due to the multiplier effect. Analyzing the role of the construction sector in Turkmenistan's economic development, the authors point out the fact that the construction industry makes a significant contribution to the output and employment in developed and developing countries (Durdyev & Ismail, 2012). Since 2011, considerable funds have been earmarked in Turkmenistan for investment in the reconstruction of the country. The Government of Turkmenistan has provided a range of subsidized housing loans, which has accelerated the development of the construction industry. In addition, a large number of companies have been privatized, which has had a positive impact on competitiveness, productivity and growth in all branches of industry, including construction. However, the authors point out the fact that there is only one construction faculty in the country. As a result, there is a lack of knowledge and skilled workforce in Turkmenistan. Therefore, the authors believe that more educational institutions should be founded in all areas of the construction industry.

Analyzing the impact of the business cycles in the construction sector on the economies of the USA, the UK and South Korea, J. Park, T. Ham and T. Hong (2012) point out the fact that, in many countries, the construction sector is crucial for development, typically accounting for 5-10% of the GDP. The authors point out the fact that construction is closely connected with the financial market. This is evidenced by the developments in the USA mortgage crisis in 2007 that greatly shook the construction sector. In a study on the impact of the construction industry on the economy of Rhode Island, a federal state of the USA (Tebaldi, 2014), the author points out the fact that this industry is important for direct job creation and income in the country, as well as strong connections with other industries, the retail, health and social protection sectors, manufacturing, the food and beverage industry, tourism, the real estate sector and leasing services. Based on Tebaldi's estimates, \$10 million in the construction output support 146 direct and induced jobs in the state. Every 100 jobs created in the construction industry support 83 jobs in other sectors through the induced economic activity. According to A. Deutsche (2019), the USA construction industry is in a growing phase. Employment in the construction sector is predicted to increase by 11% in the period from 2016 to 2026, leading to the creation of 750,000 new jobs. Employment growth in this sector is a product of overall economic growth and the population growth, which has led to an increase in demand for housing, roads and other structures.

Regarding the efficiency of the Serbian construction sector, the research study has shown that a systematic approach to the implementation of the measures that would change the institutional environment produces much better results than state intervention and direct financial incentives (Mladenovic, 2013). According to macroeconomic trends report Narodna Banka Srbije (2019, 10), as a result of the adoption of the Law on Planning and Construction and the Law on Investments, there was an increase in the number of issued building permits and an increase in the sector's share in the GDP in 2015-2019 period.

THE APPLICATION OF KNOWLEDGE MANAGEMENT IN THE CONSTRUCTION SECTOR

Obtaining growth in the construction sector is a particular challenge. Achieving business success in this sector by inertia leads to growth and development in other economic sectors. Therefore, the construction sector is an interesting area for the introduction of creative business management strategies. One of those strategies is KM, which may positively impact business variables in construction companies. KM is particularly interesting in the 4.0 Industrial revolution era, when knowledge and information are the key resource(s) for a faster innovation cycle and economic prosperity (Wisniewska-Salek, 2019). From the aspect of economic sciences, KM is the process of acquiring and allocating knowledge resources in order to achieve greater business efficiency and companies' profitability. The beginnings of the creation of the scientific concept of KM date back to the 1990s (Nonaka, 1991; Drucker, 1993; Davenport, 1994). According to Webster's financial and investment vocabulary, KM is the process of creating, institutionalizing and distributing knowledge for the purpose of improving and organizing business processes and practices (Webster, 2010). Explaining the notion of KM, Rose states that it is a concept in which a company consciously and comprehensively collects, organizes, shares and analyzes its knowledge in terms of resources, documents and human skills (Rouse, 2013). KM refers to the technologies involved in the creation, dissemination and use of knowledge data (Girard & Girard, 2015).

In the 21st century, KM is applied in the construction sector, as evidenced by a large number of scientific studies. A case study (Forcada, Casals, Roca & Gngolells, 2006) describes the strategy of introducing KM into a Spanish construction company, Natur System, specialized in facade restoration and recovery. ICT platforms with software adapted for the creative storage of knowledge and the procedures related to the functioning of small and medium-sized construction companies were used as the main instrument for strategy implementation. At the

request of Natur System Company, the software was adapted in order to filter information in the following segments: quality, the environment, the safety and health aspect, progress, changes, contracts, pricing, projects, risk and programming. The main objective was to increase the efficiency of the company and improve its cooperation with clients and relevant companies. After the testing on the main facade restoration project at 359 Balmes Street in Barcelona had been completed, the authors concluded that the introduction of the conceptual ideas of KM brought benefits to the overall management of construction companies. Improvements in documentation management and cooperation among the employees within the company were noticed, the exchange of useful information with clients and other companies was improved. However, the transaction costs related to the problem of the employees' adoption of and adaptation to new technologies were reported (Forcada *et al*, 2006).

According to C. Leal, S. Cuhna and I. Cuoto (2017) the construction sector is going through a period of instability and recession, which is one of the causes for the insufficient adaptation to the knowledge era. The authors would like to highlight the inhibitory and suitability factors of knowledge sharing in the construction sector (Table 1).

The authors conclude that the collaboration of researchers in the IT field may contribute to overcoming inhibitions for knowledge sharing in the construction sector. The development of a more creative piece of software for the acquisition and sharing of knowledge will encourage and motivate employees in the construction sector to share knowledge not only as a duty, but also as a desire. H. Robinson, P. Carrillo, C. Anumba and M. Al-Ghassani (2001) conducted a research on the results of the implementation of KM in large construction companies in the United Kingdom. The research study covered a total of 170 companies with a turnover greater than £50 million (Robinson *et al*, 2001). Large companies were selected because they had the biggest need for the introduction of KM and because of the assumption that they had the greatest financial and human resources to implement this

type of innovation. According to the authors, small organizations are also keen to adopt the concept of KM, but they are faced with a lack of skill resources in employees, as well as financial constraints. Based on the results, the authors conclude that a large number of construction companies are aware of the benefits of KM. However, companies face barriers to the implementation of concepts such as a lack of money, a poor IT infrastructure, organizational culture, and time constraints.

Table 1 The individual, organizational, inhibitory and facilitating factors of knowledge sharing in the construction sector

	Individual factors	Organizational factors
Facilitators	<ul style="list-style-type: none"> • Conformity to corporate culture • Reciprocity • Perceived value and the uniqueness of knowledge • Peer recognition • Honoring knowledge sharing commitments • Mimicking leaders' behavior 	<ul style="list-style-type: none"> • Financial/social motivations • Culture
Inhibitors	-	<ul style="list-style-type: none"> • Resources - mainly time • Mainly the male sector • High turnover • Low level of training/intellectual capital • Culture

Source: Leal *et al.*, 2017

A. Javernick-Will (2012) examined the reasons for employees' sharing knowledge in the USA construction and real estate companies. In a qualitative case study, conducted on a sample of 48 employees in 13 companies, the author identified the four major factors that influence knowledge sharing and the perception of organizational knowledge value: resources, intrinsic motivation, global incentives and

social motivation. The vast majority of the respondents cited social motivation, reciprocity, alignment with corporate culture, the imitation of leaders, the awareness of the importance of sharing knowledge and information with colleagues, respect for the obligation to share knowledge, and the perception of organizational knowledge values as the reasons for motivation for knowledge sharing. A. Javernick-Will (2012) also outlines the strategies that may help employees increase knowledge sharing across companies. The author notes certain disadvantages of the application of the qualitative method in this field. She states that future research should increase the sample size and use quantitative methods with a standard questionnaire. This would measure the ranking of the importance that the respondents attach to the motivational factors revealed in the research study. Increasing the sample would also allow comparative research with the European companies that cultivate different business patterns. According to S. Asad, M. Khalfan and P. McDermott (2005), the application of KM in the construction sector leads to improvements in processes and products (due to knowledge exchange in the supply chain), saving money (due to the centralization of communication among business partners) or an increase in earnings, as a result of using centralized knowledge as a source of competitive advantage for building new and retaining old. The construction industry faces low productivity, which Grover and Froese see as a reason for scarce KM (Grover & Froese, 2016). The authors noted that the mistakes made in one construction project are repeated in future construction projects. The main objective of their research was to evaluate the usefulness of social platforms for the management of tacit knowledge in the construction industry. An analysis of the implementation of social platforms in the construction industry was conducted in a case study of the Vancouver AYO Smart Home company at a time when demand for low-cost, durable and energy-efficient housing was growing in Canada. Social platforms use applications to facilitate communication and collaboration between different project stakeholders. According to the authors, using an application should enable the participation of two or more individuals in the creative process,

the exchange of collective skills, expertise, a better understanding of information, all in a business atmosphere of openness and mutual respect.

EMPIRICAL RESEARCH

Sample and Dataset Design

The sample includes companies from Belgrade, Novi Sad and Niš, as the largest business centers in Serbia. The sample covers the following five economic sectors: industrial, construction, IT, commercial and services. When planning the sample, due care was taken that the share of the economic sectors in Serbia's GDP was credibly maintained in the sample (Republički zavod za statistiku, 2018). In the selection of companies, due care was taken to maintain a realistic ratio in the sample when the number of micro-, small, medium-sized and large companies in Serbia is concerned. The criteria from the applicable Law on Accounting (Vlada Republike Srbije, 2013) were used to define the company size. The sampled companies were selected from the list of the Business Directory of Serbia (Stojanovic, 2018) by using the simple random sample method without repetition. An online closed-ended-response questionnaire with the interval and Likert scales was used to collect the data. The managers of the selected companies were included in the survey. The interview was being conducted from November 1 to December 15, 2018. The questionnaire was distributed three times at 15-day intervals. The second and third times, the questionnaires were sent again to the companies that had not submitted their answers after the first and second attempts. Out of the 360 questionnaires sent, the responses were received from 130 companies, representing the basic sample. Table 2 shows the number of the companies by size and sectors.

The so-called segmented sample, which includes a total of the 12 medium-sized and large construction companies extracted from the basic sample, was also used in the subject-matter analysis.

Table 2 The number of the companies by size and business sectors

Business sector	Company size				Total
	Micro	Small	Medium	Large	
Industry	4	9	10	8	31
Construction	8	10	7	5	30
IT sector	7	8	2	3	20
Commerce	6	7	5	3	21
Services	6	13	4	5	28
Total	31	47	28	24	130

Source: Authors

For the research purposes, a dataset for measuring KM in the companies was created. The dataset consists of the 11 variables classified into the five thematic units: the first unit, called academic education, includes the following three variables: the proportion of the employees in the company with a bachelor, master's and PhD degrees; the second unit, called employee training, involves the following variables: attending seminars and courses outside the company, as well as educational seminars and courses inside the company; the third thematic unit, called storage, consists of the following variables: the presence of an organized procedure for storing necessary knowledge useful for the functioning of the company and the existence of a system for the protection and registration of innovative solutions and procedures in the Intellectual Property Office; the fourth unit, called dissemination, contains the following two variables: the existence of an obligation for participants in innovative knowledge seminars to report on the results to their respective departments, sectors or immediate colleagues, as well as the variable that measures the existence of the employees' obligation to inform their colleagues about the results concerning the activity of the company upon returning from a business trip (after visiting fairs,

exhibitions and other business events); ultimately, the fifth unit, called technical support, includes two variables: the first variable evaluates a possibility of accessing the intranet in companies, and the second measures a possibility of accessing virtual libraries and knowledge bases. The variables were measured by using the interval and four-point Likert scales, where 1 is the minimum, and 4 is the maximum value of the measured indicator. The survey also includes the measurement of the companies' business variables.

Model, Analysis and Results

A total of 11 variables from the KM measurement dataset were processed by the factor analysis technique at the basic-sample level including all the five sectors ($n = 130$). The initial idea was to isolate a number of the complex factors that would later be linked to the companies' business variables. The analysis started with the following basic model:

$$X_i = a_{i1}F_1 + a_{i2}F_2 + a_{i3}F_3 + a_{i4}F_4 + e_i \quad (1)$$

where X is the value of the factor score, i is the sequence number of the variable, F represents the factors, a is the factor loadings, and e is the specific factor related only to the given variable.

A factor analysis using the maximum likelihood extraction method was used in the study (Millar, 2011). The extraction algorithm in the maximum likelihood variant (Field, 2005) is so set that the maximum likelihood of the options Λ and ψ_2 is obtained by minimizing Equation 2:

$$F = \text{tr}[(\Lambda\Lambda + \psi_2) - 1R] - \log |(\Lambda\Lambda + \psi_2) - 1R| - p \quad (2)$$

and according to Λ and ψ_2 , respectively, where p represents the number of the variables, Λ is the factor loading matrix, and ψ_2 is the diagonal matrix of the unique variance.

F is minimized through a two-step logarithm. In the first step, the conditional minimum for F_i calculated for the given y . In this way, the function $f(\psi)$ is obtained and numerically minimized by the Newton-Raphson method (Field, 2005; Ahmad, Naing & Hussein, 2007).

As all the necessary conditions of Kaizer-Mayer and Bartlett's test for continuing the analysis were met (Field, 2005), the factor analysis procedure started. Following the varimax rotation, the four significant complex factors were identified. The factor loadings are shown in Table 3. Cumulatively observed, the four factors explain 50% of the total variance. Generally, the minimum value of the factor loadings considered in studies is ± 0.3 , while the factor loadings with values ± 0.70 are considered as indicative for the well-defined structure and they are a true target of the factor analysis (Hair, Black, Babin & Anderson, 2010). Accordingly, all the cells with significant factor loadings in Table 3 are colored gray.

At the basic-sample level, the four factors that represent the strategies that the companies used and combined in KM were extracted. Factor 1 includes the strategy that relies on attending educational seminars inside and outside the company, the obligation to report to departments, sectors or their immediate colleagues on the results of innovative knowledge seminars, subscription fees for accessing virtual libraries and knowledge bases, and organizing knowledge storage procedures useful for the functioning of the company. Finally, as part of this strategy, the companies strive to have as many professionals with a college degree as possible among the employees. Factor 2 contains the strategy that includes an obligation for employees to inform their colleagues about their business performance results upon returning from business trips, the obligation to report to their respective departments, sectors or immediate colleagues on the results of innovative knowledge seminars and knowledge storage procedures useful for functioning of the company. Within Factor 3, KM relies on the strategy that seeks to maximize the percentage of professionals with a master's and bachelor degrees among the employees. Factor 4 implies the strategy that emphasizes the existence of the system of formal legal protection and registration of innovative solutions and procedures in appropriate institutions, as well as the largest possible number of employed experts holding a PhD degree. The company's management may use one

Table 3 The rotated factor matrix^a n=130

	Factor			
	1	2	3	4
The number of the employees with a bachelor degree, in %	.308	.053	.460	.125
The number of those with an MSc/MA degree, in %	.055	.064	.826	-.021
The number of PhDs	.120	-.019	.207	.430
Attending seminars and courses outside the company, in %	.544	.091	.086	.124
Attending educational seminars and courses inside the company, in %	.948	.046	.208	.078
Are there organized procedures for storing necessary knowledge useful for the functioning of the company?	.388	.332	.191	.106
Is there a system of protection and registration of innovative solutions and procedures (in the Intellectual Property Office)?	.159	.047	-.119	.798
Do participants in innovative knowledge seminars have the obligation to report the results to their respective departments and sectors, or immediate colleagues?	.486	.370	-.070	.216
Upon returning from business trips (after visiting fairs, exhibitions and other business events), are employees obliged to inform their coworkers about the results concerning the company's activities?	.168	.969	.070	-.164
Is there access to virtual libraries and knowledge bases?	.575	.155	.097	.132
Are you connected via the intranet?	.067	.218	.024	.178

Extraction Method: Maximum Likelihood. Rotation Method: Varimax with Kaiser Normalization.

^aRotation converged into 5 iterations.

Source: Authors

KM strategy or combine multiple KM strategies as well. The choice of strategies depends on the business sector, the company size, the business environment and other circumstances.

Using the obtained four-factor score, it is possible to measure the impact of KM strategies on a company's business variables. The study measured the impact of the factor scores on the 'wages' business variable. The employees' wages were measured over the wage scale consisting of three numerical degrees. In the survey, the following question was used: Is the average wage in your company lower than, equal to or higher than the national average for The Republic of Serbia? The impact of the four-factor scores on the wages in the medium-sized and large construction companies was analyzed. The operational hypothesis H1 was tested: The regression factor scores 1 - 4 (as

the independent variables, the predictors) influence the change in the dependent variable called the wages of the employees in the company' in medium-sized and large construction companies. In order to test the hypothesis, a segmentation of the basic sample was performed, extracting a total of 12 medium-sized and large construction companies. After the segmentation, the following multiple regression model was set:

$$w_i = \beta_0 + \beta_1 f_{i1} + \beta_2 f_{i2} + \beta_3 f_{i3} + \beta_4 f_{i4} + \varepsilon_i \quad (3)$$

where, for $i = n$ observations:

w_i = the dependent variable (the company's average wage)

β_0 = w intercept (the constant)

β_1 = the slope coefficient of the predictor f_{i1}

β_2 = the slope coefficient of the predictor f_{i2}

β_3 = the slope coefficient of the predictor f_{i3}

β_4 = the slope coefficient of the predictor f_{i4}

$f_{i1}, f_{i2}, f_{i3}, f_{i4}$ = the independent variables or predictors (the regression factor scores 1 - 4)

ε_i = the random error

The results show significant values for all the three R coefficients (Table 4). Due to the limitations of the smaller sample, the adjusted coefficient R^2 , which has more severe criteria, is used in the analysis. Based on the value of the adjusted R^2 , the set of the four predictor variables explains 84.5% of the variability of the employees average wages.

Table 4 The medium-sized and large construction companies: the regression analysis model summary

Model	R	R ²	Adjusted R ²	Std. error of the estimate
1	.949a	.901	.845	.153

^a. Predictors: (Constant), REGR. factor score 4 for Analysis 1, REGR. factor score 2 for Analysis 1, REGR. factor score 1 for Analysis 1, REGR factor score 3 for Analysis 1

Source: Authors

Table 5 shows the contributions by factor scores. Factors 3 and 4 have a statistically significant effect on the employees' average wages. Accordingly, construction company management use a combination of the two KM strategies.

The first strategy involving the efforts of the management to have as high a percentage of professionals with master's and bachelor degrees as possible among the employees. Management sees in experts the sources of innovative solutions useful for the company.

Table 5 The medium-sized and large construction companies: Coefficients^a

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. error	Beta		
(Constant)	2.281	.099		23.067	.000
REGR factor score 1 for Analysis 1	-.040	.119	-.083	-.336	.747
REGR factor score 2 for Analysis 1	.037	.091	.055	.406	.697
REGR factor score 3 for Analysis 1	.731	.166	1.209	4.400	.003
REGR factor score 4 for Analysis 1	.302	.108	.451	2.797	.027

^a. Dependent variable: Is the average wage in your company lower than, equal to or higher than RSD 47893, the Republic average in Serbia?

Source: Authors

The second strategy implies the introduction of the formal legal protection and registration of innovative solutions and procedures in the Intellectual Property Office, as well as insisting on a larger number of employees with PhDs. Given the value of the coefficient β_3 , the first strategy individually leads to a larger increase in the average wages in the company. When the factor score 3 jumps by one point, employees' wages increase by 0.731. If the factor score 4 goes up by one point, wages jump by 0.302. It can be concluded that the hypothesis H1 has been confirmed. No segmentation and differentiation in the context of the medium-sized or large companies in particular was possible since, in this case, the sample size fell below the statistically acceptable limit.

CONCLUSION

In this study, the impact of KM on wages growth in medium-sized and large construction companies in Serbia was analyzed. For the purposes of the research study, a KM dataset consisting of 11 variables was created. After a factor analysis, the strategies applied in KM were identified. Then, the impact of the regression factor scores on the change in the dependent variable called average wages in medium-sized and large construction companies was analyzed. Based on the obtained value of the adjusted coefficient of determination R^2 , the regression factor scores were found to explain 84.5% of the variability of the average wages of the company's employees, thus confirming the hypothesis H1. Construction companies management combine two statistically significant strategies for KM. In the first strategy, management strive to have as many employees with a master's and bachelor degrees as possible among their employees, seeing them as a potential source for company innovation. The second strategy involves the implementation of the legal protection and registration of the company's innovative solutions and procedures in the Intellectual Property Office, as well as the efforts to recruit more employees with PhDs. When the regression factor score 3, which refers to the first strategy, increases by one point, employees' wages increase by 0.731. When the factor score 4, pertaining to the second strategy, increases by one point, wages in construction companies jump by 0.302. Speaking about the sample, certain limitations related to the small, segmented sample may be observed. However, based on the insight into a very clear trend in the responses received, it is believed that a larger sample would not influence change in the results.

P. Romer (Brueck, 2018) emphasized the importance of the impact of endogenous knowledge accumulation for increasing income. P. Romer pointed out the fact that, instead of repeating the same movements over and over again, working hard in factories or on computers, people could rearrange the world and discover new ideas through knowledge accumulation. In the idea market, there is a snowball effect. As Romer says: „The more we know, the easier it gets to discover“.

The implications of the research results are primarily related to the orientation towards the company internal market. The notion of an internal market implies that the managerial and ownership structures see employees as the consumers of “products”, among which wages and money stimulants, hierarchical positions, trainings, etc. are the most important. Given the fact that the number of these “internal products” is limited, the importance of wages, which provides an opportunity for a gradual approach compared to the demonstrated knowledge and contributions, remains paramount. For this reason, according to the research results presented in this paper, KM in a segmented internal market produces significant implications for company results.

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SERVICE ORIENTATION OF THE EMPLOYEES IN SERBIA'S TOURISM AGENCIES

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In a time of fierce competition in the tourist services market, it is very important to pay attention to businesses' service orientation towards end users. Service orientation can be considered as a competitive advantage on the demanding tourism market. In this study, the relationship between service orientation, job satisfaction and empowerment among the employees of Serbian travel agencies is examined. A survey was conducted through an online questionnaire. The survey included a total of 94 respondents. The study is aimed at investigating the connection between employee service orientation, job satisfaction and empowerment. The paper also investigates whether there are significant differences between the measured variables among the employees with and without tourism education. The results showed that job satisfaction had a significant impact on service orientation. The impact of empowerment on service orientation proved to be a less significant statistical variable. According to the research study, job satisfaction occurs as a mediator between empowerment and service orientation. Also, there is no statistically significant relationship between the measured variables and tourism-related education.

Keywords: service orientation, job satisfaction, empowerment, travel agencies, tourism education, prosocial service behavior

JEL Classification: L83

INTRODUCTION

The human potential is companies' core strength in the business world, where there is great competitiveness. Tourism employees play a significant role when the provision of quality services and problem solving are concerned, especially so when the customer is dissatisfied. Given the fact that employees are in direct contact with clients, their behavior directly affects

clients' decision-making process, as well as clients' perception of the quality of the services provided (Malhotra & Mukherjee, 2004). Service orientation is a very important element of an organization responsible for the creation of the conditions that encourage employees to work and, in turn, provide high-quality services. Employee service orientation can be a major factor of competitiveness on the market. A service-orientated employee is an important actor who makes a difference between competitors. Employees play the major role when speaking about the provision of quality services and problem solving. They are in direct contact with clients, constantly interacting with

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them. Their behavior influences clients' perceptions of the quality of the services provided, as well as clients' decision-making regarding their potential new visit to the same organization or purchase of the same product (Malhotra & Mukherjee, 2004). R. Deshpandé, J. U. Farley and Jr. F. Webster (1993) point out the fact that service-oriented employees put their customers in the first place, and then all other stakeholders (managers, owners) come, in order to develop profitable businesses and ensure long-term success. Many researchers have had a focus on service orientation. Many of them have come to the conclusion that there is a positive relationship between customer satisfaction and loyalty, and between customer satisfaction and their aspirations to recommending suppliers to other customers as well (Hartline & Jones, 1996). Creating a loyal customer is one of the main goals of travel agencies. A loyal customer stems from the service orientation of the service employee. Therefore, it is very important that the company management should constantly be working on the identification of the conditions that affect each individual in order to be service-oriented and contribute to the positive business of the company (Lee, Nam, Park & Lee, 2006). Service orientation is one of the key factors when creating a superior value for the customer. Many research studies have shown that customer satisfaction, loyalty, an increase in the profit and the growth of the organization are directly the result of the company's service orientation. On the other hand, a lack of initiative to establish a service orientation policy, and a lack of the measurement and management of employee service orientation, may reduce long-term organizational performance (Lytle, Hom & Mokwa, 1998).

Service orientation can be defined as an employees' additional effort directed towards the organization itself or towards its customers (Bettencourt & Brown, 1997). A lot of research has addressed the precondition for service orientation. Work satisfaction (Netemeyer, Boles, McKee & McMurrian, 1997), empowerment (Spreitzer, 1995; Lytle *et al.*, 1998), training (Lux, Jex & Hansen, 1996), as well as the reward system (Lytle *et al.*, 1998) have a great influence on employee service orientation.

The subject matter of the research study carried out in this paper is the level of job satisfaction, service

orientation and empowerment in Serbian travel agencies. The aim of this study is to formulate and empirically test an integrated model of interrelationships and impacts between service orientation, job satisfaction, and empowerment. The author made several hypotheses on this basis that will be tested. A survey questionnaire, distributed online, was used to collect the data. The target group is the employees of Serbian travel agencies, regardless of their position in the company. The paper consists of several sections. The topic, subject matter and objectives of the research study are presented in the Introduction. After that, a review of other authors' research studies on service orientation, job satisfaction, empowerment and education is given through a review of the consulted literature, which is followed by the section in which the used methods and the discussion of the obtained results are outlined. The Conclusion provides considerations about the topic of this paper.

SERVICE ORIENTATION

The concept of Service Orientation (SO) can be viewed at two levels. The first level is the organizational level, and the second is the individual level. The organizational level of orientation is directed towards what the management of the organization consider to be significant when delivering a high quality. The individual level of orientation refers to the service orientation of the employee him-/herself, which, in his/her opinion, is important for the delivery of high-quality services (Saura, Contrí, Taulet & Velázquez, 2005). An approach like this is discussed in this paper. One of the most important factors that influence the quality of the service provided in the service industry is the service orientation of employees (Petrović & Marković, 2012). Employee service orientation plays the key role in the perception of the quality of a service and the level of customer satisfaction (Sergeant & Frenkel, 2000). Working in tourism, or working in travel agencies, requires a high level of interaction with consumers. Therefore, understanding the concept of service orientation should play an important role in service businesses. In the literature, beside employee service orientation, there is also the term "service orientation of the

organization", which can be defined as the overall climate of the organization or as the perceptions, beliefs and opinions of all of its employees (Lytle *et al.*, 1998).

There is no unique definition of service orientation. Numerous theorists have given their definitions of service orientation. Some authors define it as employees' desire to meet their clients' needs (Brown, Mowen, Donava & Licata, 2002), or employees' desire to serve their clients in a useful, cooperative and kind manner. Many studies have confirmed the fact that the availability and courtesy of staff are more important to guests than the organization's expertise and technique (Dienhart, Gregoire, Downey & Knight, 1992). Service orientation can be viewed as a business resource (Zablah, Franke, Brown & Bartholomew, 2012). Service-oriented employees will not only provide the service within the scope of their competences, but they will also endeavor to provide an additional quality (e.g. inform the client about additional content at the destination, propose an arrangement in accordance with the price/quality ratio, bring some personal or other experiences from the destination, indicate the disadvantages of the arrangement). This behavior will certainly have a positive impact on the client, and the client will feel that he/she has received an "extra" service. Clients will feel closeness with the employee and the agency, which will affect his/her perception of the quality of the service (Lee, Park & Park, 1997). Perceived service orientation of customer contact service employees in the firms: The structural relationship between organizational values and employees's attitudes. Many research studies indicate that kindness, accessibility and open communication with employees are more important to the client than their competences and work organization (Čerović, Raičević, Todosijević and Tomka, 2002).

JOB SATISFACTION

A large number of theorists believe that Job Satisfaction (JS) can strongly affect the overall business of a company. Job satisfaction is a strong indicator of the good business performance and well-being of the organization. This further implies that the employees

who are satisfied rarely leave the collective. Job satisfaction is one of the most researched phenomena in the field of management. A large number of authors have done research in the elements that influence job satisfaction. A high level of job satisfaction has proven to lead to increased performance and commitment to work, whereas a low level of job satisfaction may cause a decrease in motivation (Locke, 1976; Brown & Peterson, 1993). There are numerous definitions of job satisfaction, most often mentioned by E. A. Locke (1976), who says that job satisfaction is a positive emotional reaction of an employee, which comes from his/her work responsibilities or experience. Job satisfaction can be defined as an employee's positive or negative feelings about their job (Odom, Boxx & Dunn, 1990). M. Hartline and O. Ferrell (1996) say that job satisfaction in an organization is very important, because it affects the quality of the provided service.

The manager's main task is to constantly maintain and increase job satisfaction of his/her employees in order to achieve positive business results, on the one hand, and to constantly have satisfied clients, on the other (Rogers, Clow & Kash, 1994). Job satisfaction has an impact on employee loyalty (Williams & Hazer, 1986) and service orientation (Hoffman & Ingram, 1992). Some authors have shown that job satisfaction has a positive effect on job performance (Birnbaum & Sommers, 1993). The more satisfied the worker is, the more he/she will strive for their performance.

Therefore, the first hypothesis states:

H1: Job satisfaction has a positive impact on service orientation.

EMPOWERMENT

Organizational support, i.e. Empowerment (EM), can be defined as the degree of the support and understanding a person receives from his/her superior. The focus is on the leader who gives guidance to his/her employees, treats them with respect, and considers their contribution to the organization's operations worthwhile (Netemeyer, Boles, McKee & McMurrian, 1997). Some authors define empowerment as allowing employees to

make their own decisions in the day-to-day service of clients. Empowerment is very important for the provision of the services that are heterogeneous and need to be tailored to customers' requirements. In this case, the employee has a complete freedom to tailor the service to clients' needs (Jha & Nair, 2008). R. Brymer (1991) believes that empowerment implies a manager's willingness to give more freedom to his/her employees in the workplace. A good leader supports employees by facilitating their path to their goals, thereby increasing their job satisfaction, all with the aim of increasing productivity and achieving the goals of the company (Brown & Peterson, 1993). Some authors have put the leader at the forefront of organizational support (Webster, 1988). Since tourism is a service activity, and employees are often in contact with clients, empowerment is necessary, because employees need to solve all problems in order to satisfy the customer (Hartline & Ferrel, 1996). B. Shimko (1994) states that empowerment can be manifested as the freedom of employees to bypass standard work procedures, all with the aim of meeting clients' needs.

Organizational support has multiple effects. Empowerment increases an employee's self-esteem and increases his/her loyalty to the organization (Lee, Park & Park, 1997), as well as his/her job satisfaction (Spreitzer, Kizilos & Nason, 1997). In addition to the fact that organizational support affects job satisfaction and employee loyalty, it also affects employees' work performance (Lee *et al*, 2006).

Therefore, the additional hypotheses are:

- H2: The organizational support has a positive effect on job satisfaction.
- H3: The organizational support has a direct impact on service orientation.

EDUCATION

Qualified human resources are of great importance for the productivity of a company. This is especially significant insofar as their education is related to the area of the business conducted by the company. P. Barron (2008) states that education in the service

sector, and above all in tourism, is one of the factors that will play a crucial role in the future when the quality of the service provided is concerned. It is very difficult to find and retain the highly-skilled workers in the service industry who will be able to provide high-quality services to the current and future clients. Therefore, education plays a very important role in the future development of this service sector. V. Stefanović and Ž. Gligorijević (2010) state that education in tourism is very important, because there is no continuous economic prosperity without continuous education. Employee education may have quite a big impact on employee satisfaction. A. Lillo, A. Ramon and M. Sevilla (2007) state that the amount of the knowledge and skills that each individual possesses are the major elements of human capital. The same authors state that an individual's competences depend on the level of investment in formal education and the strengthening of practical knowledge through work experience.

The paper will examine whether there are statistically significant differences in the job satisfaction degree and the attitudes towards organizational support and service orientation between the employees who have tourism education and those who do not. In this context, the hypothesis H4 can be formulated as follows:

- H4: There is a difference in the job satisfaction degree and the attitudes towards empowerment and service orientation between the employees who have tourism education and those who do not.

METHODOLOGY

The data for this research study were collected from the employed in Serbian travel agencies. The database of the travel agency *Euroturs* was used for the submission of this questionnaire. The questionnaire was distributed by means of software for communication with partners. The questionnaire was forwarded to tour operators and subagents. The questionnaire was sent to a total of 380 e-mail addresses, and a total of 94 respondents participated in the survey.

Quantitative measurement was performed in order to cover the assertions related to job satisfaction, employee service orientation, and empowerment through a structural questionnaire. A Likert scale consisting of the five agreement levels was used for this questionnaire, in which 1 means "Disagree at all", 2 means "Disagree", 3 means "No opinion" 4 means "Agree", and 5 means "Strongly agree".

The variables used to measure job satisfaction were adapted from the research done by W. G. Kim *et al* (2005). The questionnaire from the research done by R. Dienhart *et al* (1992) and W. G. Kim, J. K. Leonga and Y. K. Lee (2005) was adapted in order to measure service orientation. Empowerment was measured by the questionnaire constructed by G. Spreitzer (1995) and adapted from his research study. An analysis of the papers that addressed these variables preceded the creation of this questionnaire.

The questionnaire consists of four parts. The first part covers the variables related to the sociodemographic characteristics of the respondents (i.e. the gender, age, the level of education, etc.). Job satisfaction was measured in the second part, whereas in the third part, the questions were about service orientation. In the fourth part, organizational support was measured.

The data analysis was performed by using the SPSS 25.0 statistical software. Descriptive statistics, regression analysis, and an independent T-test were used for the analysis. Descriptive statistics were applied when presenting the sociodemographic characteristics of the respondents. Regression analysis was applied so as to predict the impact of the independent variables of job satisfaction and organizational support on service orientation. The T-test for the two independent samples measured a potential difference between the gender and tourism-related education. The Cronbach's alpha test was used to test the reliability (internal consistency) of each measuring instrument in the questionnaire, i.e. the group of the questions used to evaluate the same dimension (in this case, JS, SO, EM).

RESULTS

Analyzing the data, it was found that a much higher percentage of participation accounted for women

(80.85%) and less than one-fifth of the respondents were men (only 19.15%). About one-third of the respondents were in their thirties, while 30.83% of the respondents were under 31 years of age. Regarding the respondents' level of education, a total of 19.15% of them were with a high-school diploma, 58.51% had higher education, and 22.34% had a master's degree. A total of 65.96% of the respondents had tourism-related education. Among the survey participants, 35.11% of them had an experience in tourism lasting up to 5 years, and 21.27% of the respondents had over 20 years of experience in tourism (Table 1).

Table 1 The respondents' sociodemographic characteristics

Variables	Number	Percent %
Gender		
Male	18	19.15
Female	76	80.85
Age		
20 and under 20	3	3.18
from 21 to 30	26	27.65
from 31 to 40	31	32.97
from 41 to 50	17	18.10
51 and over	17	18.10
Education level		
High school	18	19.15
College of applied studies	55	58.51
Master's	21	22.34
Education related to tourism		
Yes	62	65.96
No	32	34.04
Years of work experience		
from 1 to 5	33	35.11
from 6 to 10	18	19.15
from 11 to 20	23	24.47
20 and more	20	21.27

Source: Author

Table 2 shows the mean, the standard deviation, and the correlation coefficient for all the three measured variables. It can be seen that service orientation and job satisfaction have a stronger degree of linear dependence ($r = 0.618$) than the moderate degree of linear dependence between job satisfaction and organizational support ($r = 0.498$), and service orientation and organizational support ($r = 0.437$).

The obtained results show a high level of statistical significance, which means that a high level of empowerment is accompanied by a high level of job satisfaction. A simple linear regression tests the impact of empowerment on job satisfaction (Table 3). The results show that there is a statistically significant influence ($sig = 0.000$) and that the influence is as follows:

$$JS = 1.712 + 0.567 * EM$$

This prediction model explains 20.8% ($R^2 = 0.208$) of the variance of job satisfaction.

The results indicate that job satisfaction has a significant impact on service orientation and that the introduction of this variable in the regression model renders that the influence of empowerment is insignificant. This means that job satisfaction is a mediator between service orientation and empowerment.

Simple linear regression tests the impact of empowerment on service orientation. The results show that there is a statistically significant influence ($sig = 0.000$) and that the influence is as follows:

$$SO = 2.547 + 0.431 * EM$$

Table 2 Cronbach’s alphas, the mean, the standard deviation and the correlation coefficient

Variable	Cronbach’s alpha	Questions	Mean	St. dev.	Correlation coefficient		
Job satisfaction	.906	7	3.87	.74117	Job satisfaction	Service orientation	Empowerment
Service orientation	.696	3	4.19	.65529	.618**		
Empowerment	.711	6	3.81	.59704	.498**	.437**	

Note: ** The correlation is significant at the 0.01 level.

Source: Author

Table 3 The impact of empowerment, job satisfaction and service orientation

Model	Unstandardized coefficient		Standardized coefficient	t	Significance	R ²	sig. R ² change
	B	Std. error	Beta				
1 (constant)	2.547	.416		6.129	.000	.154	0.000
EM	.431	.108	.393	4.007	.000		
2 (constant)	1.741	.386		4.511	.000	.379	0.000
EM	.164	.104	.150	1.575	.119		
JS	.471	.084	.533	5.611	.000		

a. The dependent variable SO

Source: Author

This prediction model explains 15.4% ($R^2 = 0.154$) of the service orientation variance.

Multiple linear regression tests the impact of empowerment and job satisfaction on service orientation. The results show that there is a statistically significant influence ($\text{sig} = 0.000$) and that the influence is as follows:

$$SO = 1.741 + 0.164 * EM + 0.471 * JS$$

This prediction model explains 37.9% ($R^2 = 0.379$) of the service orientation variance. Compared to the first model, the second introduces a significant improvement ($\text{sig. } R^2 \text{ change} = 0.000$). In the second model, job satisfaction is a predictor with statistically significant predictive power. Unlike in the first model, empowerment is no longer a predictor with statistically significant predictive power in the second model. This indicates the correlation between the two predictors, as was confirmed earlier.

In Table 4, it can be seen that the T-test of the independent samples compares the results of service orientation, job satisfaction and empowerment for the employees with tourism education and those with a different educational background. The results show that there is no significant statistical difference

between the groups with tourism education ($M = 3.81$, $M1 = 4.14$, $M2 = 3.81$), and those without it ($M = 3.99$, $M1 = 4.27$, $M2 = 3.82$).

In Table 5, the T-test of the independent variables shows how the measured variables manifest in the male and female populations. The obtained results show that there is no statistically significant difference between the male and female respondents.

DISCUSSION

This study is aimed at formulating and empirically testing an integrated model of interrelationships and impacts between service orientation, job satisfaction, and empowerment. This was achieved through an analysis of the adequate literature and statistical data processing. The results of the analysis show that job satisfaction has a positive effect on service orientation, thus confirming the hypothesis H1. This confirms the author's assertion that there is a positive relationship between job satisfaction and employee service orientation. K. Hoffman and T. Ingram (1992) describe the sense of satisfaction in the workplace as a result of kindness, sensitivity, concern for the needs of others, understanding, and many other character

Table 4 The comparison of the measured variables by tourism education

Tourism education	Job satisfaction		Service orientation		Empowerment	
	Mean (M)	p	Mean (M1)	p	Mean (M2)	p
YES	3.81	.284	4.14	.364	3.81	.897
NO	3.99		4.27		3.82	

The T-test is significant at the * $p < 0.05$, ** $p < 0.01$, *** and $p < 0.001$.

Source: Author

Table 5 The comparison of the measured variables by the gender

Gender	Job satisfaction		Service orientation		Empowerment	
	Mean (M)	p	Mean (M1)	p	Mean (M2)	p
Male	4.01	.397	4.31	.423	3.96	.263
Female	3.84		4.16		3.78	

The T-test is significant at * $p < 0.05$, ** $p < 0.01$, *** and $p < 0.001$.

Source: Author

traits that are believed to be inherent in the service-oriented staff. Job satisfaction also affects employees' maximum respect for customers, especially so in the service sector. Accordingly, researchers point out the fact that job satisfaction has a positive impact on service orientation. A high level of job satisfaction is accompanied by a high level of service orientation. Therefore, the main task of the company manager is to achieve and maintain a high level of job satisfaction in his/her collective, which further leads to positive economic results, which is the basic goal of every company's existence.

Further results show that empowerment, i.e. support from superiors, positively influences job satisfaction, which is in line with the study by G. Spreitzer *et al* (1997). This confirms the author's assertion in the hypothesis H2. Organizational support leads to an increase in employees' self-esteem, which further affects their job satisfaction. A satisfied employee will maximize his/her ability to reach or exceed customer requirements in the service delivery process. Empowerment can influence the creativity and imagination of tourism workers when creating tourist products, based on direct sales experience. When service orientation is inserted into the research model, it is possible to conclude that the impact of organizational support is not significant for employee service orientation, thus rejecting assertion in the hypothesis H3, which says that empowerment has a direct impact on service orientation. Here, the role of the mediator is assigned to job satisfaction, which leads to the conclusion that organizational support does not have a direct impact on service orientation.

Given the fact that ever-increasing attention is being paid to worker education today, the link between employees with tourism education and those without it was examined. The research shows that there are no statistically significant differences between employees with tourism-related education and those whose education is not tourism-related; those differences are random instead. This rejects the author's assertion expressed in the hypothesis H4 that there is a difference in the measured parameters among the respondents with tourism education and those without it. Certainly, continuous education

is needed, because the market in which travel agencies operate is heterogeneous, services are not standardized and demand constantly changes. Trained managers can anticipate changes in the market and adapt business policies to contemporary trends. In the last two decades, an ever-greater number of tourism schools have intensively been opened in Serbia, so that educated staff will be available to companies, which further implies an easier achievement of a business policy. The attitudes of the male and female populations towards service orientation, job satisfaction and empowerment were also compared. The result obtained indicates that there is no statistically significant relationship and that the differences are of random nature. It is a fact that a significantly larger number of women work in the tourism industry, but the number of male workers is increasing, given the fact that this sector is becoming increasingly demanding.

CONCLUSION

In this paper, an attempt was made to expand the knowledge of employee service orientation, organizational support and job satisfaction in Serbian travel agencies. The mutual influence of these three variables was tested. The hypotheses set by the author were either confirmed or rejected with the help of statistical data processing. The results show that job satisfaction has a significant impact on service orientation. If an employee is not fully satisfied with his/her job, he/she is unable to provide a high-quality service. On the other hand, when empowerment is introduced into the model, it can be concluded that it indirectly affects employee service orientation. The impact of organizational support on service orientation is felt through job satisfaction. This means that job satisfaction is the mediator between organizational support and service orientation. This study also highlights the importance of continuous employee education. Tourism is a service industry in which demand rapidly changes and trends need to be constantly monitored so as to keep up with the competition.

The results of this research study may be useful for managers in travel agencies because, based on employees' behavior and attitudes, they can improve service standards. As the support of superiors affects job satisfaction, the role of managers would be to strive to create a comfortable working atmosphere in the organization and have an open relationship with their employees. An effective system for measuring the performance of a company's employees provides an opportunity for executives to align performance with the company's strategy. Every company is a heterogeneous system requiring a unique model for creating a work environment in which service orientation will be in the forefront. It is necessary to find a way to motivate individuals to provide the highest-quality services (Domanovic, 2013). Precisely, this is the mission of every service-oriented company.

By analyzing all of the foregoing, we can see that this paper has certain limitations that may serve as an idea for some future research. The survey was conducted at Serbian travel agencies. The survey included tour-operator travel agencies and travel agencies brokers for sale arrangements (subagents). Future research could address a specific type of agency, i.e. research could be conducted so as to only cover tour operators or subagents, since there are significant differences between the two types of travel agencies. The results of the tested categories for both types of travel agencies could also be compared. Another limitation is that all employees of the given agencies participated in the survey, regardless of their position in the company (sales, commercial, guides). Future research could be conducted by taking into consideration the job positions that would identify significant differences between the positions that are in constant contact with customers (the sales service, travel guides and escorts) and the positions that are not often in contact with customers (product creation services). Another limitation lies in the fact that the research study was conducted at agencies in the territory of Serbia. Future research could address the testing of the same variables in the neighboring countries or on tourism-leading markets, after which the findings of such research would be compared. In this paper, only three categories were tested (service orientation, job satisfaction and organizational

support). Future research could be based on how the reward system affects job satisfaction and loyalty to the company, or how job satisfaction reflects in the provision of "extra" customer service, or yet how internal communication affects service orientation.

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Conference Announcement

CONTEMPORARY ISSUES IN ECONOMICS, BUSINESS AND MANAGEMENT - EBM 2020

October 09-10, 2020, Faculty of Economics, University of Kragujevac,
Kragujevac, the Republic of Serbia

Violeta Domanovic*

On 9th and 10th October 2020, the Faculty of Economics of the University of Kragujevac will organize the Sixth International Scientific Conference entitled *Contemporary Issues in Economics, Business and Management - EBM 2020*.

The conference dedicated to the current issues in the fields of economics, business and management has been organized biennially since 2010. As in the previous years, this year's sixth conference is expected to be an opportunity for domestic and foreign researchers to confront different theoretical and empirical views, which will lead to the deepening of the existing and the acquisition of the new knowledge of the relevant aspects of economics, business and management. These new findings will be published and made available to the scientific and professional public. The conference will also strengthen the existing and enable the acquisition of new business connections and relationships, the exchange of ideas, experiences and knowledge.

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In parallel with the EBM 2020, a four-part conference entitled *The 15th Polish-Italian-Ukrainian-Serbian Scientific Symposium: Contemporary Challenges in Economics, Business and Management* will be held this year, which is a result of many years of cooperation between the Faculty of Economics of the University of Kragujevac and the following academic institutions: the Faculty of Economics of the University of Messina, Italy; the Cracow University of Economics, Poland; and the Kiev National University of Trade and Economics, Ukraine. In addition to the participants from Poland, Ukraine and Italy, students from Norway, Belgium, the United Kingdom and Slovenia, and a large number of researchers from universities in the Republic of Serbia and the neighboring countries are expected as well.

As extremely complex, heterogeneous, dynamic and uncertain, the contemporary business environment imposes the need to introduce new management concepts, methods, techniques and instruments in various fields of economics, business and management. Besides, new areas of interest are emerging as the shoots of the contemporary business environment.

Starting from the characteristics of the contemporary business environment, the following four thematic areas are defined:

- globalization and regionalization,
- key problems and challenges in management and marketing,
- accounting and business finance, and
- the application of informatics and quantitative methods in economics and management.

Within the framework of each thematic area, a number of sub-topics are defined so that each participant can find something that is the narrow area of his interest. As distinguished professors and researchers in the fields of finance, accounting and business economics, the keynote speakers at the Conference will be:

- professor Frøystein Gjesdal, PhD - NHH Norwegian School of Economics, Norway;
- professor Micahel Frömmel, PhD - Ghent University, Belgium; and
- professor Nathalie Van Meurs, PhD - Middlesex University London.

Therefore, this conference is a good opportunity for the representatives of the academic community, the representatives of the Government of the Republic of Serbia, and distinguished businessmen and experts to exchange ideas, knowledge and experience between them through panel and informal discussions, which might result in the definition of appropriate solutions

to and mechanisms for the improvement of the business operations of enterprises as entities and the performance of the national economy of the Republic of Serbia as a whole.

All original and unpublished works, both theoretical and empirical, are desirable. The papers will be subject to double anonymous review and all positively reviewed papers will be published in the Proceedings after the Conference. The Book of the Accepted Abstracts and the Certificate of Participation will be distributed to the participants on the very same day when the Conference is held. The authors of selected quality papers will have an opportunity to have their papers published in the renowned journal of the Faculty of Economics of the University of Kragujevac, i.e. in the *Economic Horizons* scientific journal, indexed in several relevant bases, namely in ProQuest/ABI/INFORM, Cabell's Directories, Index Copernicus Journals Master List, EconLit, EBSCO, Ulrich's Web.

As the President of the Program Committee I expect a larger number of participants from the Republic of Serbia and abroad, and creative, constructive and meaningful discussions, which will bring to light concrete solutions to the improvement of the efficiency of the business operations of companies and the improvement of the performance of the entire national economy of the Republic of Serbia. In addition, I expect that the specific conclusions of the Conference will provide a good basis for future research and consideration both in the academic community and in the general professional community.

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Length of the submissions: Manuscripts should contain between 5,000 and 7,000 words.

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